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AIR CONDITIONING AND REFRIGERATION News

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Inside Dope

By George F. Taubeneck

Magnet for Returning Veterans
Will They All Get Jobs?
No Welcome for Vets
Big Farm Market

Magnet for Returning Veterans

Phenomenon of our times is the overwhelming interest of G. I.'s—both in service and discharged—in the refrigeration and air conditioning industry.

Here at the NEWS one of our secretaries spends a considerable portion of her day answering their letters. They all want to know where they can go to school to learn refrigeration and air conditioning—or where they can "earn while they learn."

Their questions are interminable.

"How can I get a job in the refrigeration industry? What will I have to know to get a job in refrigeration? How have other men gotten a start in the refrigeration business? What schools are teaching a course in refrigeration that would assist me in getting a job?

"How much money could I expect to make if I should go to work in the refrigeration industry? What are the chances of promotion in the refrigeration industry?"

These are a few of the sample questions that veterans frequently ask.

Will They All Get Jobs?

One naturally wonders if the industry—notwithstanding its great prospects for enormous expansion—can absorb half the young men who want to get into it.

It's more than likely, however, that when the boys see how hard they'll have to work and how much they'll have to learn, great numbers of them will turn to something else.

Edwin H. Magnus, a subscriber who resides at 4027 Russell Blvd., St. Louis 10, Mo., has worked up a set of three sheets for use in interviewing returned vets who want to get into refrigeration. He writes:

"Last week in assisting four veterans to fill out these sheets the following decisions were made by them:

"(1) This one was a tinner by trade and he decided that he would go back to his own sheet metal layout and tinning work because he could see that the sacrifice that he would have to make to go into the refrigeration industry was greater than he could stand.

"(2) This one decided that he would study some of the subjects at night school and in the meantime go back to his job as an architectural draftsman.

"(3) This one decided that he would attend trade school in the daytime and would brush up on some of the other subjects at some of our free night schools.

"(4) This one said: 'Gee whiz! I thought that when a service man came to our house to change a belt and charged $3.50, that this was a swell racket; but I have changed my mind and I think that I will stick to regular factory work, because there I will have regular hours and will always know just where I stand.'

"Frankly, the sheets have discouraged more than they have encouraged. However, there is this to say about them. They will leave no illusions whatever in the veteran's mind as to what is expected by him and what he is going to have to do and what he is going to have to learn to advance himself in the refrigeration industry. I know a few service men who have advanced themselves by following out the suggestions on these sheets.

(Concluded on Page 6, Column 3)

Wage Talks Continue; Long Delay Seen for Appliance Price Raise

Little Progress Made In Electrical Strike

NEW YORK CITY — Although Westinghouse Electric Corp. and General Electric have both resumed wage talks with representatives of striking electrical workers and federal negotiators, little if any progress has apparently been made.

Leaders of the United Electrical, Radio and Machine Workers, CIO, continue with their demands for a 25 cents an hour raise, but they say they will settle for 18½ cents.

Mass picketing of the G-E plant in Philadelphia and Westinghouse factories and offices in Bloomfield, N. J., developed into riots in recent days as police attempted to enforce injunctions against mass picketing.

Now going into its ninth week, the strike at these two companies is taking its toll of other companies and industries dependent upon electrical supplies. Shortages of motors, wire, and other electrical parts may soon shut down many appliance assembly lines in other plants.

A serious shortage of electric light bulbs is in prospect and already two large cities, Boston and Syracuse, are hit by dwindling supplies of magnetic electrodes for arc street lights, which are normally supplied by G-E. The Syracuse mayor fears the downtown district may have to be blacked out unless strikers permit shipments to go out from the G-E plant in Lynn, Mass.

1941 Production Rates May Be Required for OPA Price Boost

WASHINGTON, D. C.—No price increases will be granted to appliance and automobile manufacturers until they have reached their 1941 production levels, if high officials in OPA have their way, according to the *Wall Street Journal.*

With government experts predicting that it will be June at least before the appliance industry is up to prewar production rates, this means that manufacturers may have to dip further into their capital to stay in business.

"Regardless of whether it takes 12 days or 12 months for an industry to get back into production, we can't do anything about their price situation in the meantime," is the way one Administrator was quoted. "If some companies have to go bankrupt in this period that will be just too bad," he reportedly added.

Even when production is back to "normal," price officials are going to be "more conservative than ever" in approving price increases on the basis of wage boosts which may be recommended by the Wage Stabilization Board, it was indicated.

"The OPA experts are determined not to grant prices high enough to enable companies to recoup losses incurred during the period of low operations," declares the report.

Raw Steel Production Recovers Rapidly; Coal Strike Might Cripple Industry

PITTSBURGH — The increases in basic steel prices announced by OPA average about $5 a ton, bringing the new average up to $65.92 a ton, but the prices are adjusted to give the small producer a break, according to industry observers here.

Meanwhile the major steel producers are approaching normal rates of output much faster than they had previously expected. The raw steel ingot rate climbed to 61% of rated capacity within two weeks and was expected to hit 80% of capacity in another week.

The new steel price increases are retroactive on deliveries to Feb. 15, and may be passed along by warehouses and jobbers, OPA has ruled.

Although steel production is steadily climbing, continued output will be seriously threatened in the event coal miners go on strike April 1. If the coal mines should be closed for a considerable length of time, steel producers will soon exhaust their already depleted coal stocks, the steel industry believes.

700 Steel Fabricators Still Shut by Strikes

WASHINGTON, D. C.—Steel fabricators, whose 700 plants are still closed by strikes, received a jolt last week when President Truman told them that the 18½ cent hourly raise he had recommended for the steel industry applied only to the basic producers and not to fabricating plants.

Quoting President Truman, one fabricator reported, "He told us that he was a strong believer in little business and small manufacturers, and that it was just common sense for the fabricating companies and the union to engage in negotiations on the local plant level."

If they have to pay their workers the 18½ cent raise granted "big steel" and still pay $5 more a ton for steel, some fabricators say they cannot stay in business.

Brass Mills May Get Price Boosts, OPA Says

WASHINGTON, D. C. — Current financial condition of the brass mill industry, where strikes continue in several major plants, is suffering from an overall hardship, industry representatives were told last week by Warren M. Huff, price executive of OPA's metals price branch.

Price increases to cover present increased production costs and those which will result if wages are increased, must await agreement by producers and workers in the amount of wage adjustment and approval of the wage increase by the wage stabilization board, Mr. Huff told the mill operators.

800 Workers Return To Fedders-Quigan

BUFFALO—About 800 workers of the Fedders-Quigan Corp. have returned to work under an agreement reached between the company and the United Steel Workers. The agreement was in line with the 18½ cent an hour wage increase granted in the basic steel industry.

Mason Elected President Of Auto Manufacturers

DETROIT — George W. Mason, president of Nash-Kelvinator Corp., has been elected president of the Automobile Manufacturers Association, succeeding Alvan Macauley, chairman of the board of Packard Motor Car Co., who has resigned after 18 years in the office.

Mr. Mason, who became president of Kelvinator in 1928, entered the automobile business in 1914 with Studebaker Corp. He subsequently was associated with Dodge Brothers, the Irving National Bank in New York City, Maxwell Motor Corp., Chrysler Corp., and Copeland Products, Inc. before heading up Kelvinator.

He continued as president when the Kelvinator and Nash companies merged in 1936.

Boost Held Up on Condensing Units

CHICAGO — The expected announcement of an industry-wide price increase for manufacturers of condensing units, which members of the condensing unit section of REMA were awaiting at the meeting here, failed to materialize.

The figures collected by the industry were said by OPA to still be unsatisfactory, and a committee of three men from the OPA Advisory Committee was named to work with OPA in speeding up the figures.

It was also said that the recent wage-stabilization policy complications may also be a factor in holding up the price increase.

Borg-Warner Forms Norge-Heat Division

CHICAGO—A new unit known as the Norge-Heat Division has been organized by Borg-Warner Corp., announced C. S. Davis, president, at a meeting of the company's board of directors last week.

At the same time, he announced that Howard E. Blood had been named president of Norge-Heat. Mr. Blood is also head of the corporation's Norge and Detroit Gear divisions and a director.

The division was created to bring the utmost efficiency into the manufacturing and marketing of Norge residential heating and conditioning equipment "in anticipation of a greatly expanded demand for these products in the months and years ahead," said Mr. Davis.

Outlining the projected operations of the new unit, Mr. Blood stated that initial production would include output of several improved models of automatic, thermostatically controlled oil-fired furnaces, utility room, and under floor heating units, oil-fired water heaters, and air filter units. These will be built to meet the requirements of every home owner, he said.

"Later on, we expect to introduce several radically new and highly efficient products which will result

(Concluded on Back Page, Column 3)

300 Attend Carrier's Postwar Sales Meeting

SYRACUSE, N. Y.—More than 300 dealers and distributors of Carrier Corp. products toured the company's plant, saw new models, and heard plans intended to produce the greatest dealer volume in Carrier's history at the first national meeting held here since before the war.

In his keynote address, Arthur P. Shanklin, vice president in charge of dealer sales, told the visitors the future looked bright once current material shortages are overcome.

"We have the best production facilities in the history of Carrier Corp., fine manufacturing personnel, a distributing organization reaching into all parts of the country, and products second to none," Mr. Shanklin said.

Models on display at the meeting included food freezers of 15 and 30-cu. ft. capacity; room air conditioners of ½, ¾, and 1½-ton capacity; a 5-ton self-contained air conditioner; frozen food display case; condensing units and cold diffusers.

Speakers on the two-day program were Cloud Wampler, president; Dr. Willis H. Carrier, chairman of the board of directors; E. T. Murphy, senior vice president; G. R. Auld, vice president in charge of manufacturing; H. L. Laube, vice president in charge of engineering; Carl U. Spriggs, assistant sales manager, Syracuse; J. A. Gazelle, assistant sales manager, Chicago; J. M. Bickel, assistant sales manager, New York

(Concluded on Page 4, Column 4)

Rema Predicts Vast Market After Strikes

Drawings to Begin for Exhibit Booths at All-Industry Show

CHICAGO (Special)—As manufacturers and parts and supplies wholesalers gathered here at the opening session of the R.E.M.A.-R.E.W.A. meetings, the emphasis was still on the shortage of merchandise—and a standard gag being used by wholesalers was to walk out to a fellow member and say, "I just got a promise of a carload of condensing units immediately (pause) minus motor, compressor body, and condenser."

While many manufacturers of condensing units and other types of refrigeration equipment and supplies are admittedly plagued by shortages of components, caused chiefly by troubles on the labor front, the general air was one of extreme optimism over the tremendous market expansion for refrigeration products. Manufacturers continue to be nearly bowled over with the actual demands for their equipment and, once shortage problems are licked, manufacturers can produce in high volume.

Members of Refrigeration Equipment Manufacturers Association were to get the first look at the layout for the floor space at the All-Industry Refrigeration and Air Conditioning Exposition in Cleveland next Fall. Drawings for space by members will probably be held within a few weeks, after which the remaining space can be drawn by non-member companies who wish to exhibit.

The exposition is sponsored by the Refrigeration Equipment Manufacturers Association and the Frozen Food Locker Manufacturers & Suppliers Association.

Approximately 275 exhibit booths will be available in the spacious Public Auditorium, according to the floor plans, and rentals run from a low of $322 for a 9 ft. by 12 ft. booth to $3,255 for a booth 31 ft. by 30 ft. in size. Majority of the booths will rent for between $500 and $1,000. Members of Rema and the locker manufacturers association will receive a 50% reduction in price of booths, according to R. Kennedy Hanson, director of the exposition.

Members of Refrigeration Equipment Wholesalers Association were wrestling with problems of intra-association policy, and were expected to publish a formal "statement of policy" with reference to the nature of the business functions of those who constitute membership in the organization.

Members were also set to battle against any move on the part of OPA to have them absorb increases in prices expected to be granted to manufacturers of refrigeration parts and supplies.

Interprovincial R.S.E.S. To Meet March 17-18

TORONTO, Ont. — Completed program mapped out for the annual conference of the Interprovincial Refrigeration Service Engineers Society at the King Edward hotel here March 17 and 18 includes talks by J. G. McMillen on "Heat Transfer Units above 32°"; Al Sawyer, "Heat Transfer Units below 32°"; S. A. Durbin, "Air Conditioning, Operation, and Service"; Paul Reed, "Going into Business"; Paul Domke, "Advantages of Heat Interchangers"; and several others.

The complete program follows:

SUNDAY, MARCH 17

9—Registration.

(Concluded on Back Page, Column 2)

Electric Assoc. Expands Sales Training Program

PHILADELPHIA — Due to the overflow demand for enrollment in its first Basic Sales Training Course for dealers, the Electrical Association here has been compelled to organize a second course. Fully 394 representatives of local dealers are already enrolled in the two courses, it was reported.

At the inauguration of the second course John A. Hamilton, managing director of the association, greeted the 121 enrollees and explained the course and its objectives. The group was also addressed by George E. Whitwell, vice president in charge of sales of the Philadelphia Electric Co., who spoke on selling and the prospects for future sales in the industry.

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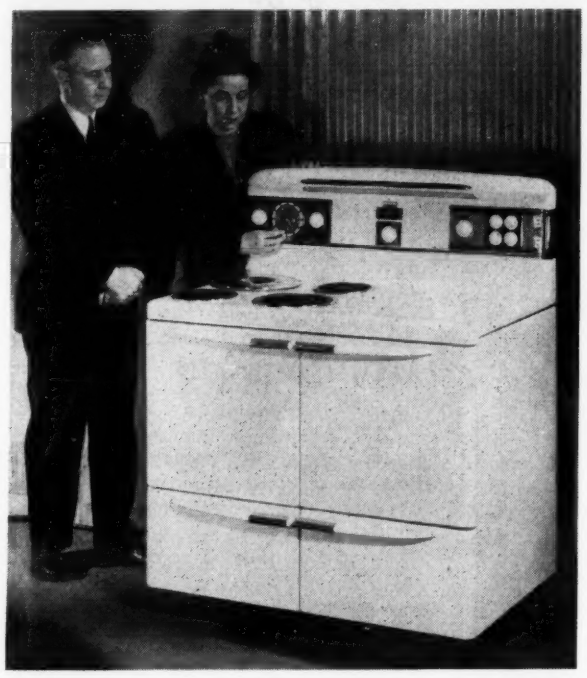
Admiral to Release Postwar Range in April



At left Harold D. Conklin, manager of Admiral Corp.'s appliance division, Chicago, watches Willie Mae Rogers, home economic director, demonstrate some of the principal features of Admiral's first postwar electric range scheduled for release in April.

Dealers will get each of the two models in supply sufficient for display and sales, Mr. Conklin says. Both models feature automatic oven control and a cooker that will prepare a complete meal.

At present, Mr. Conklin says there are 3,500,000 electric ranges in American homes and a potential market demand for one million more.

Fay-San Gets Admiral Corp. Distributorship for Rochester

CHICAGO — Fay-San Distributors, Inc., exclusive distributor of the Admiral line in Buffalo, has taken over exclusive distributorship rights to the Rochester territory, announces Wallace C. Johnson, manager of field activities for Admiral Corp.

Richard J. Levi will head the sales division of the Rochester office located at 95 North St. At the new branch a complete Admiral line will be carried, including electric refrigerators, home freezers, the Dual-Temp refrigerator, and other home appliances and accessories.

Refrigeration Firm Starts

VANCOUVER, B. C., Canada — F. L. Sanderson has established a new electrical and refrigeration business at 945 Commercial Drive, Vancouver, B. C.

Consolidated Edison to Stress Package Sales to Market Increased Output

NEW YORK CITY — Anticipating a return of a highly competitive market in electrical appliances, Consolidated Edison Co. of New York, Inc., expects to resume its package-sale merchandising campaign when sufficient standard-brand products again become available, it was disclosed here by Ephraim F. Jeffe, vice president in charge of sales.

"If anybody has any idea that customers are going to push walls down in getting to his merchandise let me recount an experience I had recently," Mr. Jeffe asserted. "I had on hand 2,000 gas refrigerators, made to market at $140 each, and there were no takers. Landlords didn't want them because they could hold tenants at will. Tenants didn't want them because they had been educated to the custom of landlords furnishing refrigerators.

"I finally sold 1,900 of the refrigerators to the Housing Administration for use in Quonset huts, and the price was just a fair one—$112. I've heard stories about people coming in to buy everything including the paper on the wall, but I haven't seen any evidence to support them."

Mr. Jeffe warned that appliance manufacturers and dealers must realize "that they are in competition for just one thing—the dollar—and they are going to have to match appeal with alligator bags and automobiles and furs."

Just returned to his desk after four years in the Army, Mr. Jeffe, who received the Legion of Merit for his work as a brigadier general assigned to the War Production Board, outlined Consolidated Edison's postwar sales plans. These plans, he said, include a campaign now in progress to augment the sales staff and indoctrinate it with enterprise and courtesy, and plans to remodel showrooms along the lines that will make them models in the appliance field.

"We are more anxious to sell appliances than any one," Mr. Jeffe declared. "The more appliances our customers use the better our business will be. If we could add just five cents a month to the bill of all of our consumers it would increase our income by $1,000,000 a year.

MARKET NEVER SATURATED

"I have never known a saturated market in electrical appliances. As long as high quality mrechandise is presented properly people will buy—if not for the purpose of acquiring a new device—to replace one which has worn out.

"But we must face facts. Consolidated Edison will be in the appliance field with campaigns again because the great output of manufacturers will have to find an outlet. I know what this country can produce.

"I saw in the Service how Army and Navy know-how enabled a little fellow accustomed to doing $2,000,000 worth of business a year, to expand to $42,000,000. These teachings will stick, and we are going to have to find an outlet for this vastly increased production."

Definite plans for package sales have not yet been made by Consolidated Edison, Mr. Jeffe explained, because "we have always insisted on standard-brand merchandise and not enough of it is on the market at present."

Consolidated Edison conceived the package-sale plan in 1932, in the depths of the depression, and proved so successful that it was continued until interrupted by the war. Under the plan several appliances are offered at a group price, which can be met either in cash or on credit terms.

"Our losses from bad credit were infinitesimal," Mr. Jeffe said. "People were so grateful for the opportunity of buying appliances they wanted for a couple of dollars a month that they were careful to preserve that credit so they could buy more."

LAST PREWAR PACKAGE-SALE

Consolidated Edison's last package offered before the United States entered the war was a Eureka tank-type vacuum cleaner, whose retail price was $49.95, and a Schick electric razor, whose retail value was $12.50, for a total package price of $23.90. The cleaner alone was priced at $22.90, and the razor could be had for $1 additional.

Mr. Jeffe recalled that in 16 days 31,348 units were sold, bringing in $748,956. "We had on order 150,000 more packages," he said, "and in my honest opinion we could have sold 250,000."

In conducting such campaigns, the company purchases the merchandise from manufacturers at off-peak times at volume rates. Mr. Jeffe asserted that his company realizes no profit, placing the margin of profit into a pool to be divided among participating dealers.

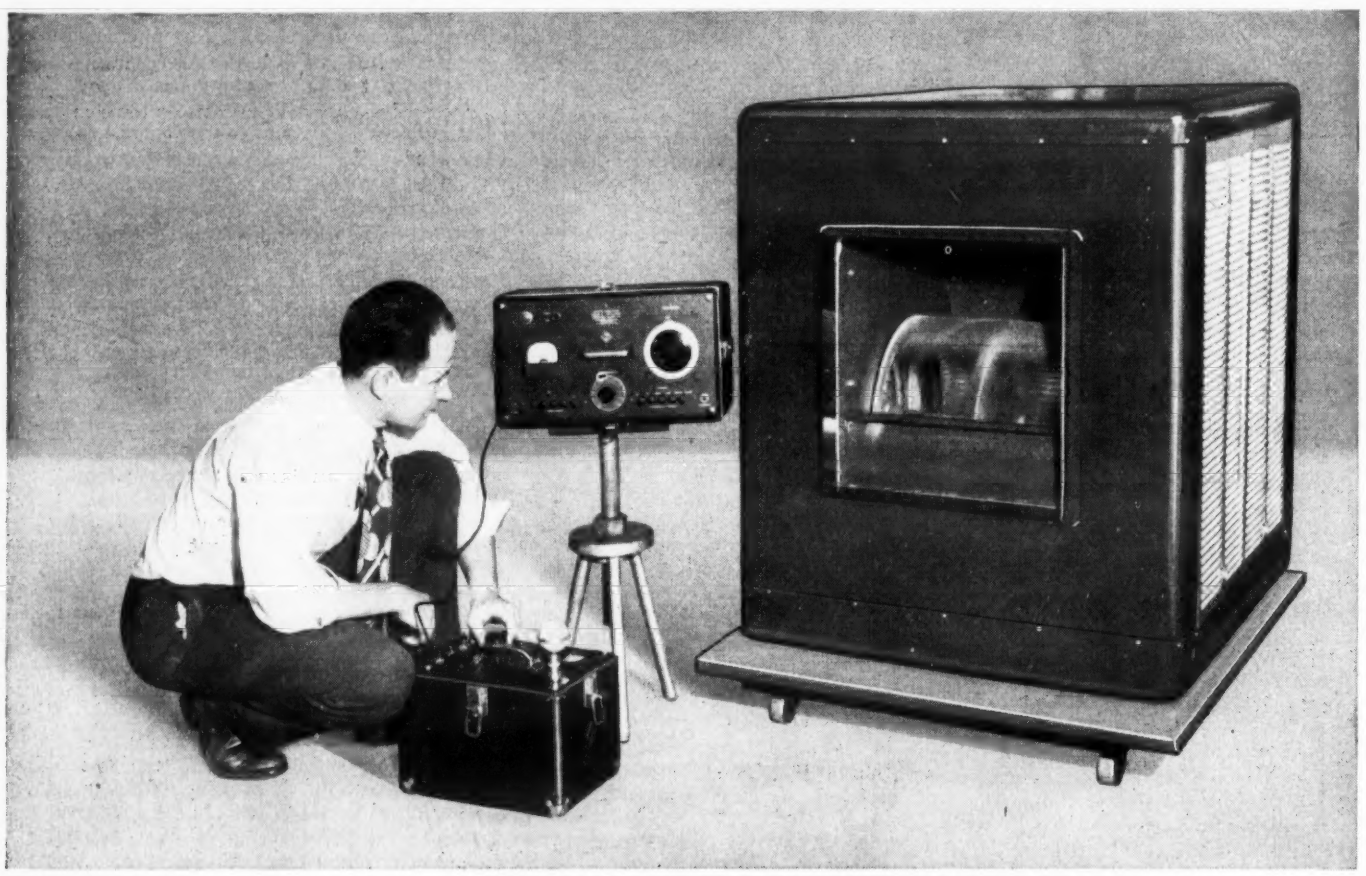
During one of its merchandising drives, conducted from March 20 to July 31, 1939, Consolidated Edison offered $9.50 for old ice-boxes against the purchase price of any new refrigerator the customer chose. There were 82,112 refrigerators sold for a total of $10,000,000. A sample package offered by Consolidated Edison was the one sold from March 1 to June 30, 1940. In this a General Electric vacuum cleaner, whose retail price was $62.50, was offered for $36; a six-way Artistic floor lamp, valued at $21.90 was offered for $2.95 additional, and a $12.50 Proctor "Never-Lift" iron for another $1.95 additional.

Coolerator Co. Completes List of 65 Distributors

DULUTH, Minn. — The Coolerator Co. here, which claims to be the only home refrigerator company making all three standard types: electric, freezer, and ice, has announced that its national setup of 65 distributors is now completed.

Six distributors in the mountain and Pacific states are making ready for first shipments of the postwar Coolerators. They include:

Sues Young Co., Los Angeles; Seattle Radio Supply Co., Seattle; McCormick & Co., San Francisco; Bargeldt Supply Co., Portland, Ore.; Prudential Distributors, Spokane, Wash.; and the Parker Co., Denver.



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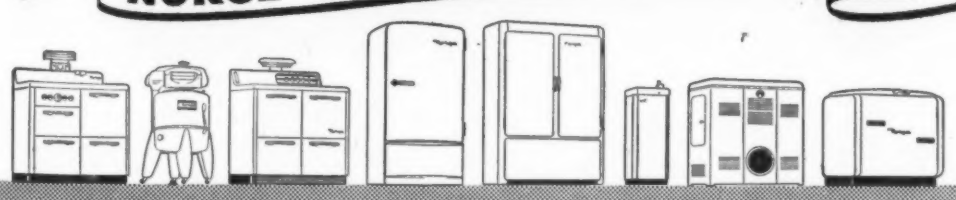
During 1946 Norge will run more than 112,000,000 advertisements in leading national magazines to pre-sell Norge products and bring more prospects into Norge dealerships.

NORGE HOUSEHOLD APPLIANCES



SEE NORGE BEFORE YOU BUY

Frigidaire Launches Training Program

DAYTON, Ohio — Frigidaire Division, General Motors Corp., launched the most extensive sales management training program in its history last week when the first 10 day training schools for more than 300 key district personnel got under way here.

Seventy-five appliance sales managers and district representatives of the 44 Frigidaire distributing organizations throughout the country, together with factory sales department people, were in attendance and were familiarized with all phases of organization, products, advertising, sales promotion, publicity, sales, distribution, and service as these subjects pertain to the district and dealer organizations. Succeeding schools will be attended by district commercial sales managers, sales promotion managers, district representatives, and other key sales people.

Ellsworth Gilbert, sales promotion manager of Frigidaire, who has directed the formation and curriculum of the school, stated, "Since Frigidaire products were last merchandised in 1942, a number of changes in personnel have taken place in the field organizations and in the manufacture and merchandising of products. This school is the initial move to thoroughly acquaint all of our key district personnel with the Frigidaire products and methods so that this personnel may contribute even more toward the efficient cooperation between the factory, districts, and dealers.

"The sales policies and methods, previously developed and enlarged upon during these 10 day schools, will be carried to the dealers and salesmen through the medium of district sales schools."

Included in the 10 day schedule were presentations by E. R. Godfrey, general manager; P. M. Bratten, general sales manager; M. M. Roberts, works manager; L. A. Clark, assistant general sales manager; H. F. Lehman, assistant general sales manager; F. H. McCormick, assistant chief engineer: E. F. Schweller, assistant chief engineer; P. V. Sprout, service manager; F. H. Peters, advertising manager; E. Gilbert, sales promotion manager; H. M. Kelley, appliance sales manager; W. F. Switzer, market and research manager; Verna L. Miller, director, home economics department, and other department heads.

Eaton Purchases Control Of Dynamatic Corp.

CLEVELAND — Eaton Mfg. Co., producer of automotive parts now expanding its activities in several fields including air conditioning and refrigeration, has purchased all outstanding shares of Dynamatic Corp. of Kenosha, Wis., manufacturer of eddy current and induction drive apparatus used in refrigeration and air conditioning drives and other applications, announces J. O. Eaton, chairman of the Eaton board.

Activities of Dynamatic will be combined with those of the Eaton Research laboratories, which have been engaged in development work on the eddy current drive since 1940, said Mr. Eaton. Eaton research has been concentrated on drives of smaller sizes designed for volume production for home appliances, automotive vehicles, airplanes, and other applications.

Established in 1933, Dynamatic Corp. is headed by Anthony Winther, president; Martin P. Winther, vice president and general manager; and Mart Kindt, secretary.

Carrier Dealers View New Products

J. M. Bickel (right), Carrier district dealer manager in New York City, discusses the ½ ton Model 51F1 conditioner with (left to right) E. G. Pierce of Charlestown, Mass.; Lewis L. Barnes of Atlanta; and Paul E. White, Miami, who attended Carrier's recent sales meeting, the first since before the war.

On hand from the midwest were (left to right) F. J. Moran of Chicago; A. V. Bice, Columbus, Ohio; Ben. Collins, Houston; Russell H. Gray, Dallas; Arthur P. Shanklin, Carrier vice president in charge of dealer sales; J. A. Gazelle, Chicago district manager; James Bunn and Benjamin Markus of Chicago; and R. E. McCarthy, Des Moines.

* * *

Carrier Meeting--

(Concluded from Page 1, Column 4)

City; L. M. Beals, director of advertising and sales promotion; R. C. Cady, manager of service; M. E. Mooney, director of sales, applied refrigeration; Fred W. Smith, director of sales, packaged refrigeration; and George T. Long, director of sales, packaged air conditioning.

Products of Tomorrow Exposition Postponed

CHICAGO — The Products of Tomorrow Exposition, which was scheduled to open April 27 at the Coliseum here, has been indefinitely postponed due to manufacturers' uncertainty as to products and delivery schedules, announces Marcus W. Hinson, general manager.

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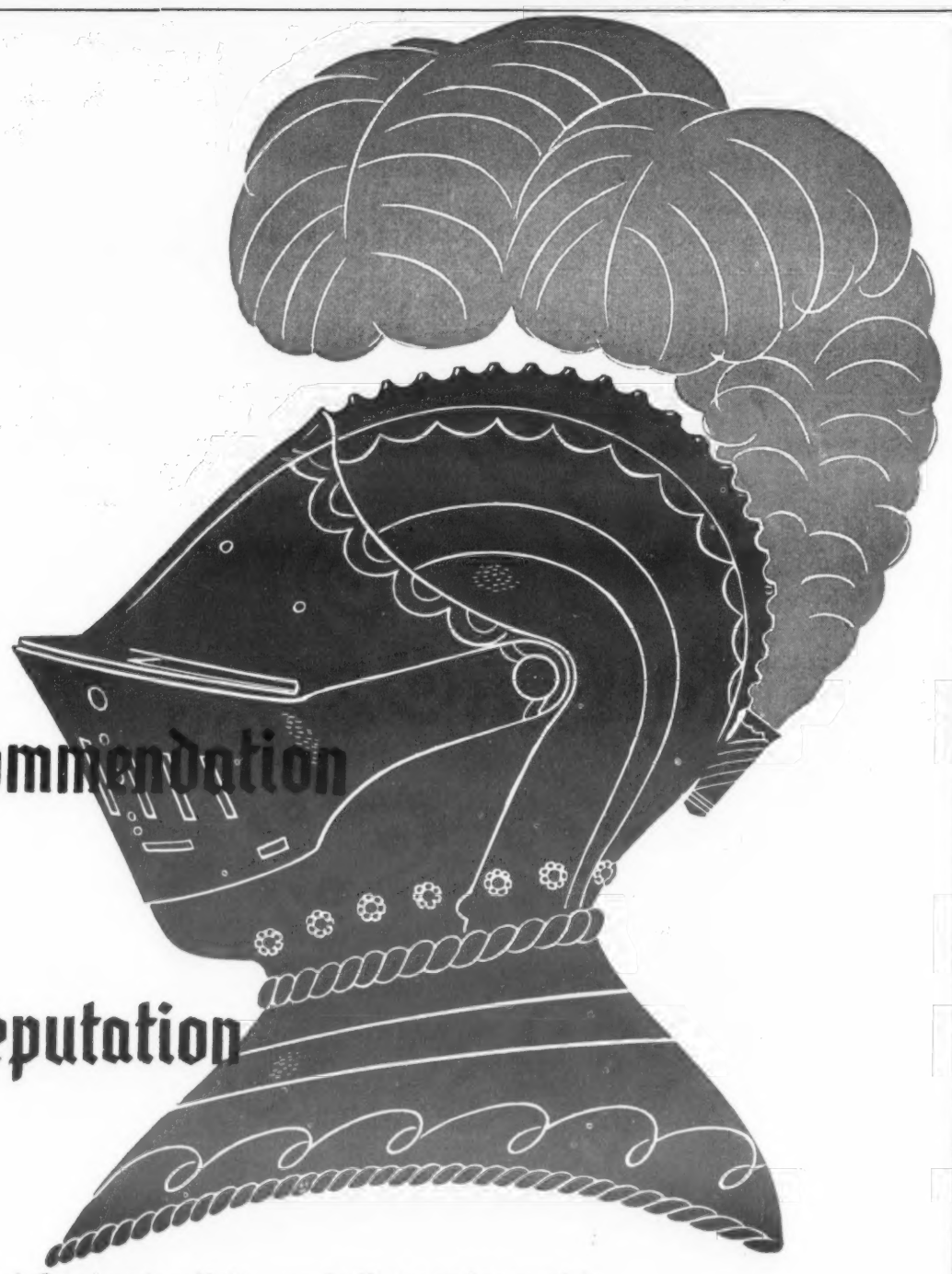
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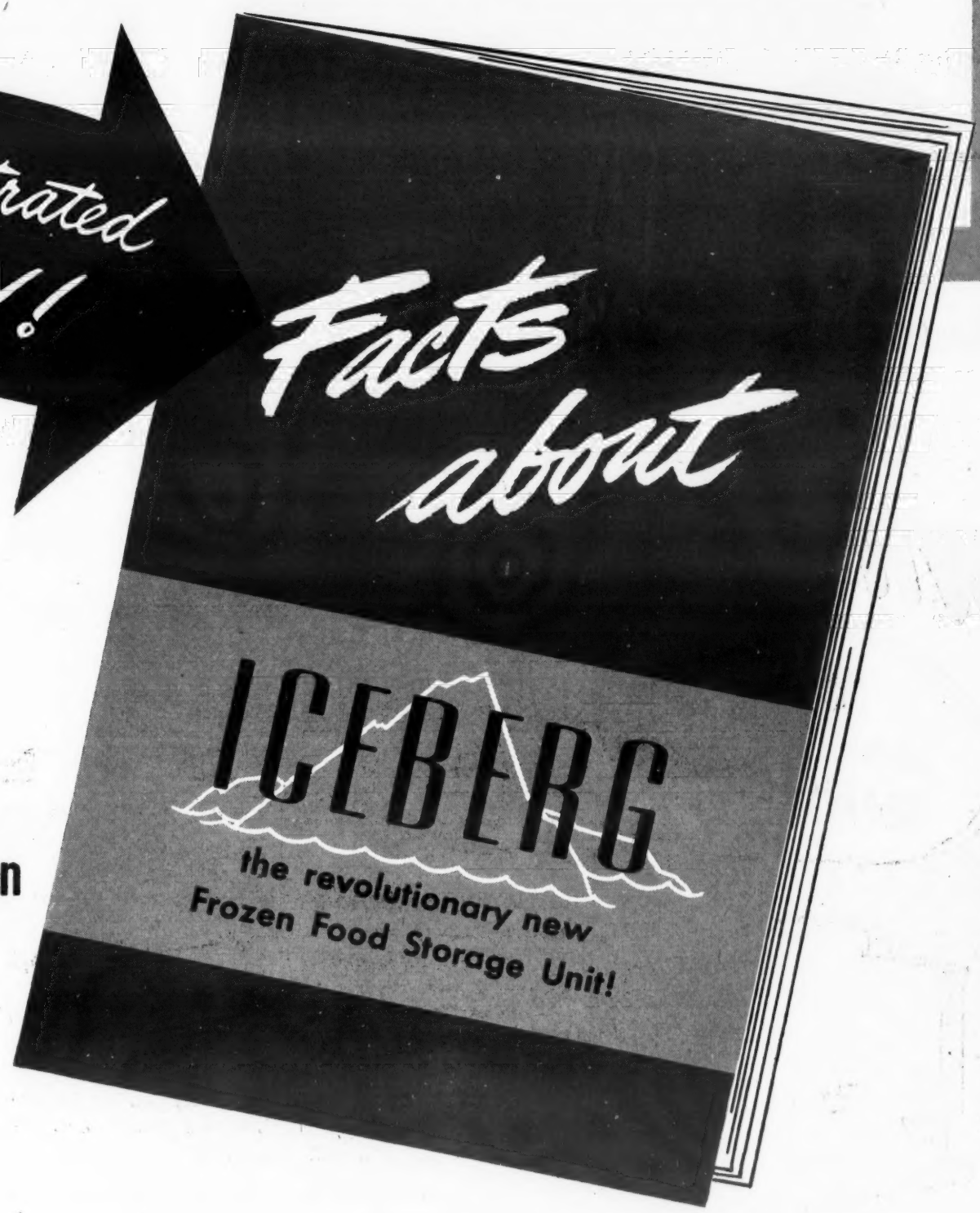

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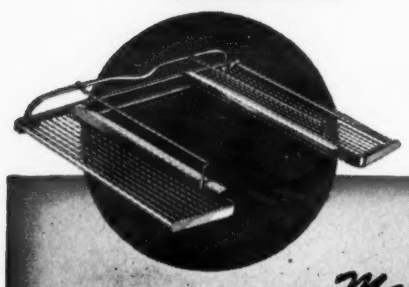
MANUFACTURERS ARE CONSIDERING EQUIPPING KITCHEN CABINETS WITH STAINLESS STEEL SHELVES

WWP



WALL WIRE PRODUCTS COMPANY

11333 GENERAL DRIVE
PLYMOUTH, MICHIGAN

Makers of STAINLESS STEEL AND TINNED REFRIGERATOR SHELVES AND WELDED WIRE PRODUCTS

Inside Dope

By George F. Taubeneck

(Concluded from Page 1)

"My advice to the man is to accept any job in the refrigeration industry regardless of the conditions or pay, because it has been my experience and the experience of several hundred men, whom I have assisted, that once they are in, their qualities and qualifications will be quickly recognized, and they will be paid and advanced accordingly.

"Many men who fill out this chart decide that their old job seems a lot easier and this may be better after all, because I think you will agree that the refrigeration industry has need for only those men with an unusual desire and unusual willingness to sacrifice not only hours of labor, but who are willing to study and waive immediate financial gain until they can prove themselves.

"I am willing to send these sheets to any man who has done his part in helping to win the war, and give him any assistance that I reasonably can, free of charge or obligation.

I am at present in the consulting engineering business specializing in industrial training, service, and maintenance planning."

No Welcome for Vets

In today's mail came a letter from a vet who *has* taken refrigeration training. Is his problem fairly universal? We invite replies from subscribers.

* * *

526 West 193 Street
New York 25, N. Y.

Editor:

I am writing this letter for very many veterans who are in the same boat as I am in.

I have completed a 15-week course in domestic and some commercial refrigeration, and now for four months, many of us, including myself, have been constantly refused the chance to get into the real thing.

It's true 15 weeks in sch•ol mean hardly anything, but how are we to face the future if we, including myself, are always given the same answer: "Sorry, we can't use apprentices"; "Sorry, all full." Or "we only hire disabled."

They even try to discourage us from entering the field.

Won't any of the refrigeration houses start in and hire from the veteran schools? They'll be getting a man that will work hard because it means his future.

Thank you very much.

MURRAY WARSHAW

Big Farm Market

The National Electrical Manufacturers Association believes that American farmers plan to spend $2.5 billion in the next five years on electrical appliances. It conducted a survey which showed that farmers now have accumulated savings of nearly $17 billion, that 3,000,000 farms now have been electrically wired, as compared with only 75,000 thirty-one years ago.

The number of farms wired last year was 270,000, despite wartime restrictions.

Mark Thomson to Manage Apex Contract Sales

CLEVELAND—Mark L. Thomson, formerly a sales executive of the Sears, Roebuck & Co., has been appointed manager of contract sales for the Apex Electrical Mfg. Co., reports A. C. Scott, vice president in charge of sales.

Mr. Thomson has had extensive experience in the advertising and sale of heavy appliances, having served in various capacities in this branch of Sears, Roebuck & Co. merchandising for 16 years.

Heads Philco Research

WILLIAM E. BRADLEY

He was recently appointed director of research for Philco Corp.

Wesco Names Wm. Meek Asst. General Manager

PITTSBURGH—William B. Meek will become the new assistant general manager of Westinghouse Electric Supply Co., according to David M. Salsbury, vice president and general manager. Mr. Meek's former post as manager of the St. Louis office will be assumed by Robert P. Smith.

Associated with Westinghouse since 1933, Mr. Meek has served in various sales capacities in apparatus, supply, and the appliance and radio divisions. Before heading the midwest district office in St. Louis, he was manager of the New Orleans branch and vice president of the Monroe Hardware Co., a Westinghouse distributor.

The duties of the new assistant general manager, Mr. Salsbury explained, will include overall supervision of sales and field contact with district offices.

Craighead Promoted By Bendix Appliances

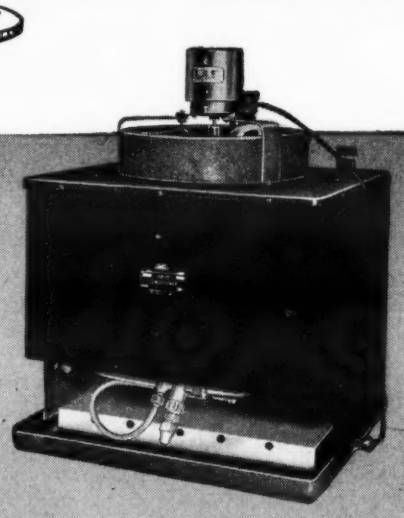
SOUTH BEND, Ind.—The new position of assistant sales manager of Bendix Home Appliances, Inc., will be filled by Norwood D. Craighead, announces W. F. Linville, general sales manager. Pending the selection of a successor, however, Mr. Craighead will likewise continue to serve as merchandising manager and director of sales training.

In this latter post Mr. Craighead has directed the training of 15,000 retail salesmen since V-J Day, Mr. Linville added. The firm plans to have between 18,000 and 20,000 retail salesmen geared to sell the Bendix automatic washing machines, dryers, and ironers during the coming year, he said.

A vice president of Ross Roy Corp. before joining Bendix less than a year ago, Mr. Craighead has had approximately 22 years executive sales experience in specialty sales training and sales promotion.

WHY WAIT? GET SET FOR A BIG YEAR WITH THESE NEW 1946 PROFIT MAKERS

AMCOIL Jobbers can deliver RIGHT NOW!



UTILITY DOWN-DRAFT UNIT
Push this forced-draft unit for efficient cooling of packaged and bottled goods, where dehydration is not a factor.

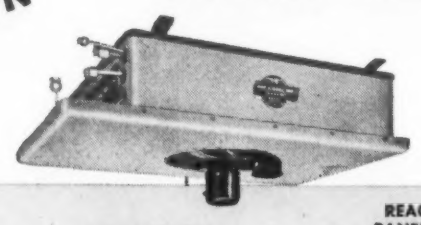
UTILITY FOOD CONDITIONER
Nothing else like it! A "natural" for profits because it does a *double job:* cools and prevents dehydration, too! When prospects know the Food Conditioner story—they BUY. *Tell* it to 'em:

ONLY with *the AMCOIL built-in humidifier,* plus *36° F. temperature,* can foods be properly preserved. ONLY an AMCOIL FOOD CONDITIONER does this double job. *Sell* it to 'em!

The AMCOIL Food Conditioner will pay for itself over and over again by preventing shrinkage of perishable foods . . . by eliminating the meat-trimming that trims profits . . . by retaining the natural freshness and bloom of meats. The Market is BIG. The Profits are BIG. Get set for a BIG Year. Order from your AMCOIL Jobber Now!

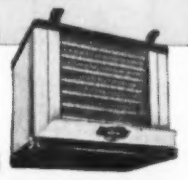
NOW IN PRODUCTION

TWO-WAY Ceiling-Mounted Cooling Units



Discharges cooled air horizontally in two directions along the ceiling. Sizes adaptable for reach-in boxes and walk-in coolers. Write for Bulletin.

ALSERVICE OPEN FACE



DELUXE FOOD CONDITIONER

REACH-IN PANEL UNIT
ZERO BREEZE LOW TEMP. UNIT

COMING SOON
COMFORTAIRE CONDITIONER
Send for Bulletin AC-2

OTHER FAST-MOVING AMCOIL PROFIT MAKERS

Licensed Under Latent Cooler Patents: Pat. Pend.

MANUFACTURERS' REPRESENTATIVES

J. J. Madden, 212 Madison St., Dedham, Massachusetts
William D. Keefe, Chaffee, New York
E. J. Oliphant & Co., 505 Uhler Bldg., Marion, Ohio
Jordy Engineering Co., Inc., 813 Howard Ave., New Orleans, La.
Robbins-Greenwood Co., 3104 Main St., Houston 4, Texas
Ernest Darwin Corporation, P.O. Box 2654, Charlotte 1, North Carolina
A. J. Nelson Co., Box 2244, Denver, Colo.

AMCOIL
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808

Complete Line of
HERMETIC
Self-Contained OPEN TYPE and REMOTE TYPE
Refrigerating Units
⅛ TO 20 H.P.

UNIVERSAL COOLER

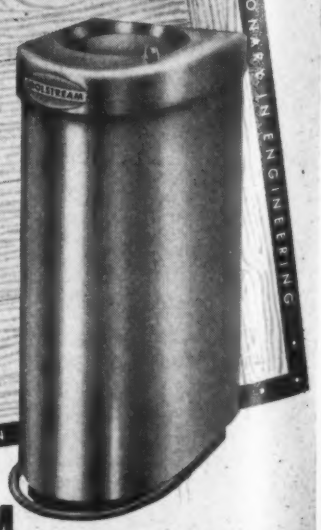
MARION OHIO — BRANTFORD ONTARIO

WE SELL TO MANUFACTURERS ONLY

UNIVERSAL COOLER CORPORATION
Automatic Refrigeration since 1922

COOLSTREAM CONSTRUCTION COUNTS

COOLSTREAM
ELECTRIC WATER COOLERS
SPECIFICATIONS:
QUALITY MATERIALS + SUPERLATIVE ENGINEERING + DISTINCTIVE DESIGN = UNSURPASSED EFFICIENCY AND EXTREMELY ECONOMICAL PERFORMANCE
IN STAINLESS STEEL ONLY
Send for catalog



EVOLUTIONARY IN ENGINEERING
REVOLUTIONARY IN DESIGN

THE COOLSTREAM CORPORATION
240 BUTLER STREET • BROOKLYN 17, N. Y.

Sales Record, Population, Electrification Determine Dealer's Share of Appliances

MILWAUKEE—To guarantee each of its dealers a fair share of available General Electric appliances, the distributorship of E. H. Schaefer Co. here has set up an allocation plan by which the allotment figures for each product as furnished by the manufacturer, the population figures for the dealer's territory, his 1941 sales record, and the extent of electrification in his territory determine the quantity of appliances a given dealer can expect during 1946.

First step in Schaefer's plan, according to C. C. Walker, operating manager, is to determine each dealer's fair share in the light of previously mentioned qualifications and then make out individual work sheets, which are incorporated into a simple visible record file.

COMPLICATED BY CHANGES

Changes in retail outlets complicate this computation, because new franchises have been granted in some communities, and since all dealers must now handle the entire G-E line, some large outlets which may have handled refrigerators solely will now sell all 17 of the appliances, he explained, going on to say that for these reasons allocation on the basis of 1941 sales alone is not practical.

When the dealership has remained basically the same, work sheets showing population and 1941 sales, together with Schaefer company's knowledge of the territory, governs the percentage of production to which the dealership is entitled. This percentage, continued Mr. Walker, is then carefully weighed in balance of many factors concerning local markets.

A dealer located in a community where there is a washing machine factory will be allocated few if any such appliances, though he may receive 10 or 12% of the 1946 supply of refrigerators and other appliances. In such a community, it is impractical, reasons Mr. Walker, for people to buy washers from other than the local company, thereby paying unnecessary freight and other charges.

INDIVIDUAL RECORDS

After the individual dealer's share has been determined in per cent of the district's expectation for the year, it is recorded on his work sheet in the visible record file so that periodic allocations can be made as the appliances are shipped to the Schaefer company.

This visible record file consists of six visible record panels with 70 pockets per panel. Each dealer's record occupys a pocket, and there is a set of cards showing name, routing of shipments, terms, date of franchise, credit rating, and name of the salesman handling the account. Space is also provided for posting completed shipments to the dealer.

Here's how the set-up is operated: Say that Schaefer is notified of the shipment of 120 refrigerators from the manufacturer. First move then, explained Mr. Walker, is to compare this with the total 1946 refrigerator allotment. When this is done, this quantity is found to be 1.2% of the ranges expected during the year.

PERCENTAGE DETERMINED

Next, a clerk goes through the file, setting a Graph-A-Matic signal for the number of ranges each dealer is entitled to receive. This number is determined by figuring 1.2% of the dealer's yearly allotment as shown on his card.

Signals in the file can be set to show that one, two, or three ranges are to be sent to the dealer. If more than three constitute his share, special tabs are available on which the correct number can be written in. As a final check, the signals are counted to make sure the allotted number of refrigerators equals the number received by the distributor.

TYPES ARE NOTED

Positioning of the signals indicates the type of appliance to be shipped, if more than one type is received simultaneously by Schaefer.

File drawers are turned over to stenographers in the sales department at this point, the visible type of file enabling them to go through the records and type purchase orders without turning cards. These are then mailed to the dealer for his signature with an enclosed self-addressed envelope. As a rule, said Mr. Walker, the purchase order is returned before the shipment is received, permitting immediate transfer of each appliance to a retail outlet without storage expense and with reduced handling costs. In 95% of the transactions, the dealer meets this request, permitting a great reduction in our bookkeeping and financial costs, Mr. Walker stated.

These savings, he continued, are vital to us in view of the lower margin of profit permitted a distributorship under present OPA ceilings.

Each completed allocation is recorded in the file when the dealer receives his shipment, thereby preventing a dealer from receiving more than his total share during the year.

HANDLING OF SIGNALS

For the allocating of more than one appliance at a time, three signals are built into the Schaefer company file. After the drawers have been sent to the sales department and purchase orders written for the three appliances indicated, they are returned, and the signals are re-set for three other appliances until the entire line of 17 appliances are covered.

Mr. Walker has found, also, that this allocation record file is a wonderful pacifier for irrate dealers who tramp into the Schaefer office with the complaint that some other customer is getting better service.

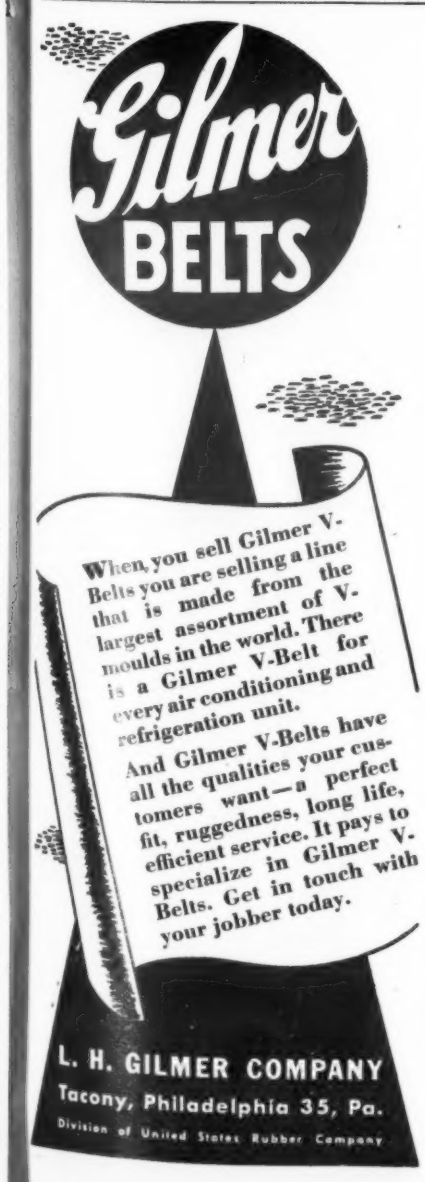
When Mr. Walker explains fully the Schaefer system for fair play, and when the dealer is confronted with the visible record file, he usually goes home with the knowledge that he is getting the fairest kind of a deal after all.

Bendix Appoints Russell Divisional Sales Head

SOUTH BEND, Ind.—Appointment of J. Warren Russell as a divisional sales manager for Bendix Home Appliances, Inc., is announced by W. F. Linville, general sales manager. Mr. Russell will have headquarters in Garfield, N. J.

Prior to joining Bendix Home Appliances, he was sales manager of the Northern Air Conditioning Corp.'s appliance department in Newark.

be sure
YOUR REFRIGERANT
IS DRY
use
JAY CEE
SILICA
GEL
JAY CEE
SILICA GEL
A superior dehydrant
REFRIGERATION GRADE
JOLIET CHEMICALS, LTD Factories: JOLIET, ILL.
Get that "last drop of water" out of your refrigerant. Use Jay Cee Refrigeration Grade Silica Gel in your dehydrating cartridges. By careful comparative tests Jay Cee Gel has been found to be a superior dehydrant.
It instantly dries methyl chloride, sulphur dioxide, freon and other refrigerants. Prevents corrosion and ice formation. It is chemically inert . . . removes acids from the refrigerant . . . is not affected by oil . . . has high particle strength and does not break down in use. Because of great pore surface area (1 cu. in. = 50,000 sq. ft.) has highest moisture adsorption capacity. Developed especially for the refrigeration industry under strict laboratory control. Write for complete bulletin and prices.
JAY CEE
JOLIET CHEMICALS, LTD.
702 INDUSTRY AVENUE JOLIET, ILLINOIS


Gilmer
BELTS
When you sell Gilmer V-Belts you are selling a line that is made from the largest assortment of V-moulds in the world. There is a Gilmer V-Belt for every air conditioning and refrigeration unit.
And Gilmer V-Belts have all the qualities your customers want—a perfect fit, ruggedness, long life, efficient service. It pays to specialize in Gilmer V-Belts. Get in touch with your jobber today.
L. H. GILMER COMPANY
Tacony, Philadelphia 35, Pa.
Division of United States Rubber Company

22 Norge Wringer-Type Washing Machines Given OPA Ceilings on Wholesale and Retail Sales

DETROIT—Twenty-two models of wringer-type washing machines produced by Norge Division, Borg-Warner Corp., have been assigned OPA ceiling prices on distributor sales to dealers and dealer sales to consumers.

Prices for both classes of sales are:

* * *

	Sales by distributors to dealers				Dealers' ceiling prices to consumers			
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 1	Zone 2	Zone 3	Zone 4
Model	Each	Each	Each	Each	Each	Each	Each	Each
W-12	$40.88	$42.90	$43.60	$44.97	$ 59.95	$ 61.45	$ 63.95	$ 65.95
W-12-P	47.70	48.72	50.42	51.79	69.95	71.45	73.95	75.95
W-14	45.86	46.84	48.48	49.79	69.95	71.45	73.95	75.95
W-14-P	52.42	53.40	55.04	56.35	79.95	81.45	83.95	85.95
W-17	53.47	54.41	55.99	57.24	84.95	86.45	88.95	90.95
W-17-P	59.76	60.71	62.28	63.54	94.95	96.45	98.95	100.95
W-17-G	78.38	79.41	81.10	82.48	114.95	116.45	118.95	120.95
W-18	62.91	63.85	65.43	66.68	99.95	101.45	103.95	105.95
W-18-P	69.20	70.15	71.72	72.98	109.95	111.45	113.95	115.95
W-16	52.42	53.40	55.04	56.35	79.95	81.45	83.95	85.95
W-16-P	56.61	57.56	59.13	60.39	89.95	91.45	93.95	95.95
W-4	56.61	57.56	59.13	60.39	89.95	91.45	93.95	95.95
W-4-P	62.91	63.85	65.43	66.68	99.95	101.45	103.95	105.95
W-6-D	52.42	53.40	55.04	56.35	79.95	81.45	83.95	85.95
W-6-D-P	56.61	57.56	59.13	60.39	89.95	91.45	93.95	95.95
W-6-D-G	69.20	70.15	71.72	72.98	109.95	111.45	113.95	115.95
W-6-B	53.47	54.41	55.99	57.24	84.95	86.45	88.95	90.95
W-6-B-P	59.76	60.71	62.28	63.54	94.95	96.45	98.95	100.95
W-6-B-G	78.38	79.41	81.10	82.48	114.95	116.45	118.95	120.95
W-6-E	56.61	57.56	59.13	60.39	89.95	91.45	93.95	95.95
W-6-E-P	62.91	63.85	65.43	66.68	99.95	101.45	103.95	105.95
W-6-E-G	75.50	76.44	78.01	79.27	119.95	121.45	123.95	125.95

Automatic Washer Assigned OPA Ceiling Prices On Spinner Model and 18 Wringer Washers

NEWTON, Iowa — Ceilings prices on 18 wringer-type washers and one spinner model have been established by OPA for Automatic Washer Co. here. The order covers sales by distributors to dealers and sales by dealers to consumers in three zones as follows:

* * *

		Sales by distributors to dealers			Dealers' ceiling prices to consumers		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Article	Model	Each	Each	Each	Each	Each	Each
Wringer-type washing machine	WA-46, MA-46, RA-46, CA-46, BA-46, SA-46	$46.63	$49.95	$53.30	$64.95	$ 74.95	$ 79.95
	WB-46, MB-46, RB-46, CB-46, BB-46, SB-46	53.30	56.63	59.95	79.95	84.95	89.95
	WG-46, MG-46, RG-46, CG-46, BG-46, SG-46	66.63	69.97	73.28	99.95	104.95	109.95
Spinner-type washing machine	82	66.63	69.97	73.28	99.95	104.95	109.95

Hurley Washer Unit Assemblies Priced

CHICAGO—Ceiling prices on two washer unit assemblies have been established by OPA for Hurley Machine Division of Electric Household Utilities Corp. here.

Assembly No. A-6000 consists of an agitator, agitator know, basket, and balancer. Assembler No. A-6001 includes a lid, drum, screen, plate rack, silverware rack, and glass rack.

For sales by the manufacturer to distributors and retail dealers, the prices are as follows:

	Ceiling prices for sales to—			
	Distributors	Retail dealers		
		Zone 1	Zone 2	Zone 3
Article	Each	Each	Each	Each
Assembly No. A-6000	$17.25	$20.70	$21.30	$21.60
Assembly No. A-6001	27.25	32.70	33.60	34.35

The above prices are f.o.b. factory on sales to distributors and f.o.b. factory branch on sales to dealers.

Ceiling for sales by distributors to dealers are:

	Sales to retail dealers		
	Zone 1	Zone 2	Zone 3
Article	Each	Each	Each
Assembly No. A-6000	$20.70	$21.30	$21.60
Assembly No. A-6001	32.70	33.60	34.35

Prices on sales by dealers to ultimate consumers follow:

	Sales to consumers		
	Zone 1	Zone 2	Zone 3
Article	Each	Each	Each
Assembly No. A-6000	$34.50	$35.50	$36.00
Assembly No. A-6001	54.50	56.00	57.25

Appliance Mfg. Co. Gets 13.8% Price Increase

ALLIANCE, Ohio—Appliance Mfg. Co. here has been assigned an OPA price increase factor of 13.8% to replace the 7.7% factor originally in effect. The OPA order also lists distributors' prices for sales to dealers and retail ceilings on sales to consumers for its washers.

Distributors in Zones 1 and 3 who have been using ceilings established under Section 15 of MPR 86 for the models listed below may add the following amounts to their present ceilings:

6K	$2.04
6KP	2.24
6KG	3.16
8K	2.35
8KP	2.59
8KG	3.50

New ceilings for distributor-to-dealer sales in Zone 2 are:

6K	$48.55
6KP	53.25
6KG	70.70
8K	59.35
8KP	64.60
8KG	81.55

Retail ceilings on sales to ultimate consumers are as follows:

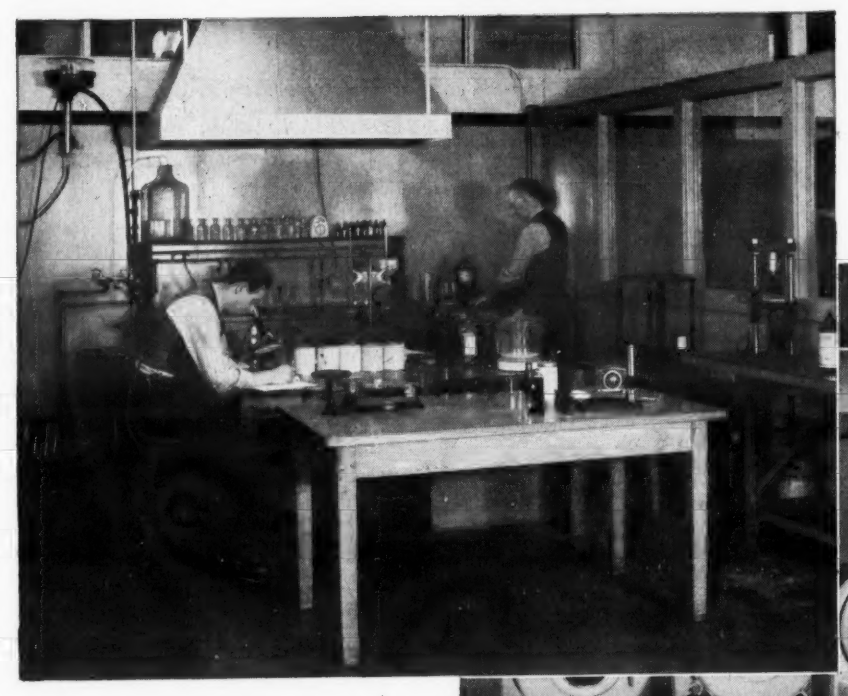
	Zone 1	Zone 2	Zone 3
	Each	Each	Each
6K	$ 72.00	$ 77.00	$ 82.00
6KP	82.20	87.20	92.20
6KG	98.15	103.15	108.15
8K	92.35	97.35	102.35
8KP	102.60	107.60	112.60
8KG	118.50	123.50	128.50

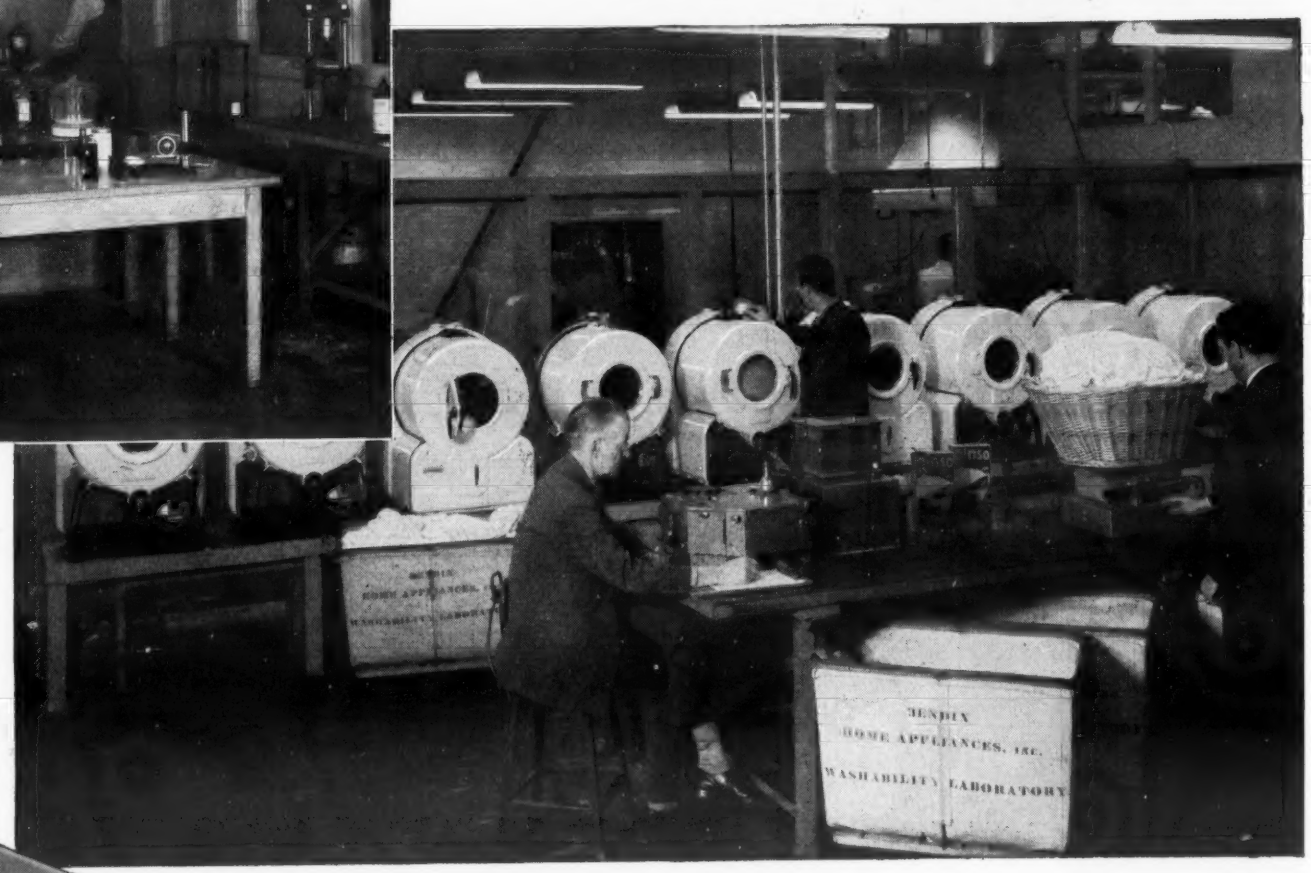
12.3% Price Boost Okayed For Washing Machine Casters

WASHINGTON, D. C.—Manufacturers' ceiling prices of washing machine casters have been increased 12.3% over Oct. 1, 1941, levels in an industry-wide boost recently announced by OPA. Producers of other types of casters have been given a 7.3% increase.

These price increases will not be passed along to the ultimate consumer. The wholesaler is required to absorb 37% of the increase, with the retailer taking up the remainder.

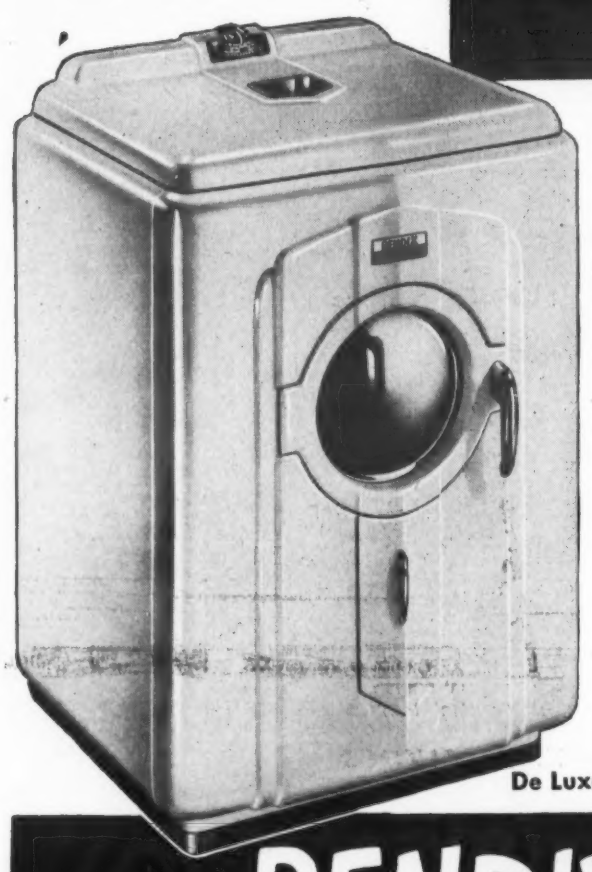
Two-Way Research Keeps BENDIX *Ahead!*





Above: K. C. Randolph, chief chemist, determining the effects of certain soaps, and processes on types of fabric. A. E. Murphy, laboratory assistant, reading a total dissolved solids meter, to check soap left in clothes.

Right: View of testing bench. Left to right, A. E. Murphy, operating a Hunter Reflectometer. K. C. Randolph, inserting measured detergent into one of test machines. R. E. Oeler, project engineer, weighing test wash load.



De Luxe Model

Here at Bendix Home Appliances, Inc., in South Bend, intensive research is conducted from *both* the manufacturer's and the home owner's viewpoints.

From the Engineers' Viewpoint—Bendix automatic "washers" are operated and tested through every conceivable condition under which they will be expected to perform.

From the Housewives' Viewpoint—The Bendix Home Laundry Institute staff observes and checks results from machines operated under typical home conditions, with various kinds of fabrics and clothes soiled in use—and while using different soaps, detergents, softeners and other cleansing agents.

Both such research activities are directly resultful in improving the qualities of design and manufacture, and raising the efficiency of Bendix performance in the home.

BENDIX automatic **Home Laundry**

BENDIX HOME APPLIANCES, INC., SOUTH BEND, INDIANA · PIONEERS AND PERFECTORS OF THE AUTOMATIC "WASHER"

It's
FULL FLOODED
THE HUBBELL-YODER REFRIGERATION PLATE

- Every square inch of surface is prime heat pickup

ENGINEERING SERVICE, INC.
1311 West 80th St., Cleveland, Ohio
Sole Agents

THE COLD CANVASS

Jottings from Notebooks of the Staff

Too Much Merchandise

You'll have to admit that we're starting off with a story about a guy whose problem is distinctly different—he's got too much merchandise to sell.

He's Lyman Wiard, appliance dealer in Greenville, Mich., who innocently sent in a bid of $275 when he saw obsolete B-25s listed for sale in a war surplus listing. Sometime thereafter came the notification that his bid had been accepted—for 43 of the bombers.

Disposing of them ought to give Dealer Wiard something to do until the new refrigerators and other appliances begin to get into the field in volume.

* * *

A Conspiracy?

Some of the more suspicious among us have sometimes wondered if some of the shortages of merchandise are not in the nature of a gigantic conspiracy to keep the public's appetite for a product whetted by continually making out how hard it is to get.

You could almost prove the psychology of this contention in the case of cigarettes. When they flooded back onto the market after V-J Day, sales of cigarettes dropped off and have been falling off ever since.

What brings this to mind is a press dispatch from Chicago which read:

". . . Radio Co. reported radios are being stolen so fast that its plans for getting models to distributors are being upset.

"New radios bring fancy prices—and no questions asked—so thieves have been taking them from loading and receiving platforms, railroad cars, and trucks. The thieves take any model radio they can lay their hands on, and recently lifted three sets from a truck making a short trip within Chicago."

Could be.

* * *

10 to 1 Odds

Some of the more profound editorial commentators have been telling us that our present troubles stem from the fact that since V-J Day the people of this country have been on a big spree—instead of getting into good solid jobs or business they've been out on a spending spree, blowing their money, gambling, etc.

One example to the opposite doesn't reverse the trend, of course, but the one we are going to cite is quite a stand against the prevailing tendencies.

It has to do with "Silent Sammy" Eichner leaving the racetracks to enter—of all things—the electrical appliance business with a store out on Grand Rivef Ave. in Detroit. Since 1933 he has been general secretary and general handy man for the Detroit Racing Association, and during the season he handled the Information Window—where you get the fast answers if you go to register a "beef."

But being around the tracks made Sammy nervous—gave him high blood pressure.

"This electrical appliance business—it's much quieter," he says satisfiedly.

Sammy, we hate to say it, but as the radio gagsters say "you haven't been around here very long, have you?"

* * *

What Is Commercial Refrigeration?

The Director of Sales for one of the largest companies in the refrigeration field wrote in not long ago and asked what at first glance seemed a simple question, but which got complicated as all get-out when we tried to give him a simple answer. In his letter he said:

"Our management has asked me to define commercial refrigeration.

"There is a wide variety of opinion as to where commercial refrigeration ends and where industrial refrigeration starts. Anything you can do to help . . . etc."

Some manufacturers have set up their own arbitrary dividing lines, between commercial and industrial refrigeration equipment—some setting it at equipment rated at 10 tons or more, others 30 tons or more, and others 50 tons or more.

However, we asked the Director of Sales if it might not be more plausible to base the definition on the application to which the equipment is put, so that the definition might sound something like this.

"Commercial refrigeration is any application of mechanical equipment (other than a household refrigerator) regardless of size of equipment, in which the products or items held under refrigeration flow directly to the consuming public."

Such a definition would include all applications for food stores, restaurants, beverage cooling, fountain water cooling, locker storage plants, and fur storage. It would exclude industrial processing jobs, and food processing, and bulk food storage jobs which properly fall in the industrial class.

We haven't had any reaction from the Director of Sales on this, but we'd like to. What think you?

The Enemy at Home

A wartime development that may prove one of the "hottest" peacetime applications for the air conditioning industry is the treatment of air through air conditioning systems for the control of respiratory diseases.

Steven M. Spencer's article "War on the Flying Microbes" in the Feb. 16 issue of the *Saturday Evening Post* says that epidemics of influenza, virus pneumonia, and other respiratory diseases can be effectively retarded through proper treatment of indoor "breathing" air.

Germicidal ultraviolet lights and glycol vaporizers have already scored notable successes in this work, Mr. Spencer says.

In an experiment conducted at the Great Lakes Naval Training Station last winter, glycol vapor was piped into the ventilating ducts of several dormitories—resulting in a 63% decrease in the sickness rate during a 17-day period.

Continues the article: "Closely controlled studies have revealed that, when operating rooms were equipped with ultraviolet lamps, the number of wound infections was sharply reduced, and the measles rate in ultraviolet irradiated classrooms of three schools in the suburban Philadelphia area was only a quarter of that in the unprotected rooms—during the worst measles epidemic since 1919."

Ultraviolet lights have now been installed in from 300 to 400 schools and some 1,500 hospitals, and even in the monkey house of the Philadelphia Zoo. Glycol sprays are making their appearance in many places too.

"How far this aerial approach can bring us toward the ideal of a germ-free town, particularly with respect to the childhood diseases, may be determined by still another experiment, now being carried on in Pleasantville, a village of about 4,000 population in Westchester County, New York," the *Saturday Evening Post* article continues.

"Ultraviolet lights are hung in the schools, the Sunday-school rooms, and the other church rooms used by the children, the movie houses, child-health clinics, and the children's room of the public library."

* * *

Marsh Clans Up

Organization of the "Marsh Clan" was a feature of the recent celebration of the Jas. P. Marsh Corp., Chicago, of the 80th Anniversary of the founding of this nationally known manufacturer of pressure gauges and heating specialties.

The corporation celebrated with a dinner party for all employes who became members of the Clan by virtue of five years or more of service.

Oldest employe, Charlie Lubeck, long time foreman of the gauge department, who began his 41 years of service about mid-way in the corporation's history, was singled out for special honor. He was presented with a diamond studded Clan pin by Barrett Scudder, president of Marsh. Charlie, known as "The Big Guy" was characterized as enjoying single blessedness, "due, no doubt, to his chief interest always having been Marsh gauges and the fish at Fox Lake."

Other groups, the 25 year, 20, 15, 10, and 5, each has its distinctive Clan insignia. The 25 year pins are set with a diamond. These were presented as a part of the evening's program which featured a gourmet's dinner, climaxed by the cutting of the huge 80th birthday cake.

Charlie Lubeck gets his diamond studded Marsh Clan pin as oldest employe in point of service, from Barrett Scudder, president.

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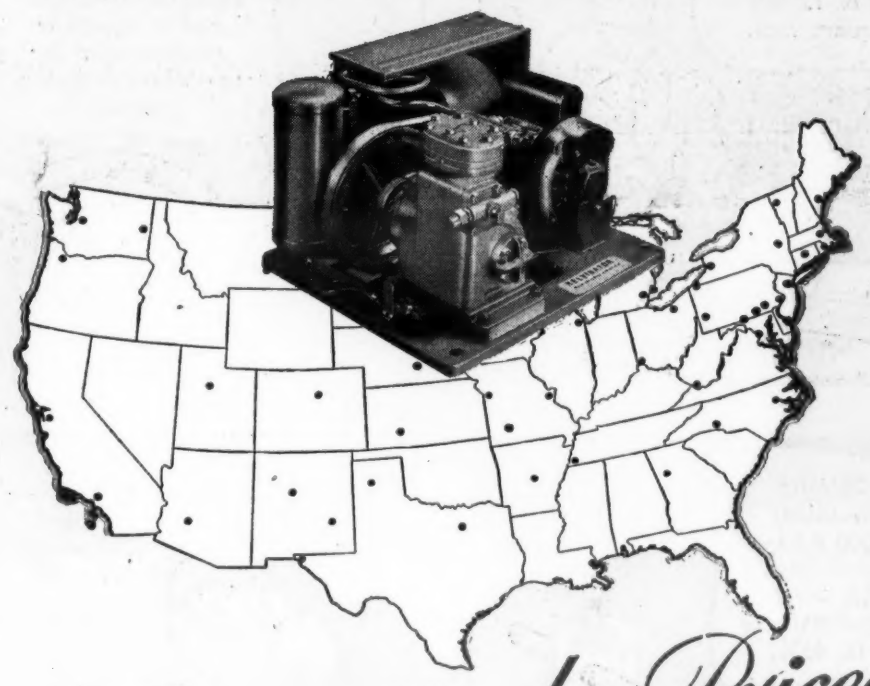

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Gov't Claims Air Conditioning Costs Can Be Slashed Drastically

• • •

Editor's Note: In a release which one industry research expert calls "interesting, though somewhat startling," the War Assets Corp. asserts that use of activated carbon would slash original costs of air conditioning equipment to *one fifth* of its present levels and would further reduce operating costs 75 or *80%*.

Activated carbon, according to the government report carried on this page, would permit these drastic cost reductions chiefly because its air purifying properties would cut the fresh air requirements of the average installation.

Experts in the field are somewhat skeptical. Read the report and then see what the experts say on this and the next page.

Consulting Engineer Points Out Several Errors In 'Extreme Claims' of Agency

213-15 South Broad St.
Philadelphia 7, Pa.

Editor:

At your suggestion I have read the document of the War Assets Corp. on the subject of the use of activated charcoal in ventilating systems.

Passing over the very incomplete and, therefore, misleading statements on stuffiness, I wish to comment on the 75 and 80% reduction in cost of present installations.

Outdoor air seldom amounts to more than one-third of the total load of an air conditioning plant, so that a saving of all of this outdoor air can obviously not exceed this amount. Actually, outdoor air is additionally required to make up for outward leakage from the building, such as that due to cracks around windows, opening doors, and various positive exhaust systems. In the usual office building or factory, these latter losses far exceed the equivalent of 10 cu. ft. per person as stated.

There is further error in assuming that a given saving in outdoor air produces a similar cost reduction in the air conditioning apparatus. Reduction in outdoor air may affect your refrigeration plant as a fraction of the capacity devoted to cooling outdoor air but it does not appreciably affect the size of any other portions of the equipment.

The statement as regards operating cost is misleading. These costs can only be affected by the cost of heating and cooling outdoor air. The lights and people within a structure, in winter, form the source of the necessary heat for a very large proportion of the outdoor air requirements.

Nothing in the foregoing should be construed as questioning the utility of activated carbon in reducing noxious odors. The criticism is leveled at the extreme claims and overall generality of applying it to an ordinary air conditioning system in the absence of concentrated spots of contamination.

Reference is made to one company in the United States now engaged in the sale of activated carbon for air purification and decontamination, and the fact that the cost of the compound used runs approximately $6,000 a ton retail. It is not my intention to defend this manufacturer's price structure but it should be pointed out that activated charcoal must be placed in proper containers, for the passage of air, and that whatever their retail price is, it includes the cost of containers, engineering, and sales expense. It is quite possible that the charcoal itself forms the smallest part of their cost.

Charles S. Leopold

Here's the 'Interesting Though Startling' Report from the War Assets Corp.

WASHINGTON, D. C.—A war created product developed by the Army Chemical Warfare Service for use in gas masks may give rise to the creation of a new industrial activity—air purification and cheaper air conditioning—the War Assets Corp., a subsidiary of Reconstruction Finance Corp., has announced.

The product, activated carbon, was developed by the Army Chemical Warfare Service to protect the civilian population in the event of poison gas air raids and to protect servicemen in poison gas attacks.

Technical experts of the War Assets Corp. pointed out that although activated carbon has been known to chemists, it did not become much more than a laboratory curiosity until World War I when the Bureau of Mines produced the most effective type then known at its Pittsburgh experiment station for the protection of military personnel against the lung searing mustard, chlorine, and phosgene gas attacks of the Kaiser's Imperial Army.

The product, which is also known as activated charcoal, differs from ordinary charcoal which has been used for generations as an absorbent and clarifier as in sugar refining in that it has a greater capacity for absorbing gases and fumes. The increased absorption qualities of activated carbon are obtained by passing steam or various gases at high temperatures through a retort containing wood, coal, or other carbonaceous substance. The activated carbon used in World War I was made from cocoanut and walnut shells.

The activated carbon developed by the Army Chemical Warfare Service is made from bituminous coal and contains about 8% copper which is used as a promoter to increase the charcoal's absorbent and gas retaining qualities. The product is in the form of grains slightly larger than ordinary sugar and 100 pounds of it will absorb 35 pounds of gaseous vapors, fumes, or odors. In absorbing gases, vapors, and odors which, in fact, are kinds of gaseous emanations, the activated carbon condenses and holds the gaseous substance. One pound of activated carbon is capable of purifying 5,000,000 cu. ft. of polluted air.

Behind the air purification and cheaper air conditioning possibilities of activated carbon are several not too well known scientific facts. A stuffy atmosphere is uncomfortable not so much because of any shortage of oxygen but because of the presence of odors, vapors, and noxious substances carried in the air. Although a person only breathes about a cubic foot of air a minute, ventilating engineers gear air conditioning units to provide about 10 cu. ft. per person per minute just to keep the air in a room from becoming stuffy.

By taking the odorous impurities out of the air in a building by passing the air over activated carbon, the War Assets Corp. marketing and research technicians point out, the same air could be used and re-used thereby reducing the cost of cooling outside warm air or heating outside cold air. It is estimated that using an activated carbon only about one fifth as much initial equipment apparatus would be needed to provide air conditioning for a building and that operating costs thereafter would also be 75 or 80% less than under present installations.

As an air purifier and odor remover activated carbon could find wide-spread use in hospitals to remove the odors of phenol, ether, and cresol, in the animal houses in zoological gardens, in fertilizer plants, stock yards, in various industrial and manufacturing plants, such as paint and solvent factories, coal tar plants, and in industries or shops using large quantities of easily vaporized solvents.

Although one company in the United States manufactures a cylinder containing about a pound of activated carbon for air purification and decontamination purposes, the cost of the compound used—running at about $6,000 a ton retail—makes broad and widespread usage uneconomical. The CWS product was produced during the war for an average cost of $770 and some of it for as low as $600 a ton. If produced on a mass production basis for wider usage, War Assets Corp. technicians estimate the cost might be cut to a fraction of its present cost.

Commercial exploitation of activated carbon could be easily undertaken by any company willing to invest in the necessary research, machinery, and equipment development and marketing since usage of the product for air purification, deodorizing, and cheapened air conditioning is patent free. At the present time, War Assets Corp. marketing specialists are attempting to interest various air conditioning firms in the product's possibilities and are also seeking to have laboratories, university research departments, and technical development institutions and organizations explore the problems involved in creating a new commercially profitable industry from this product. . . .

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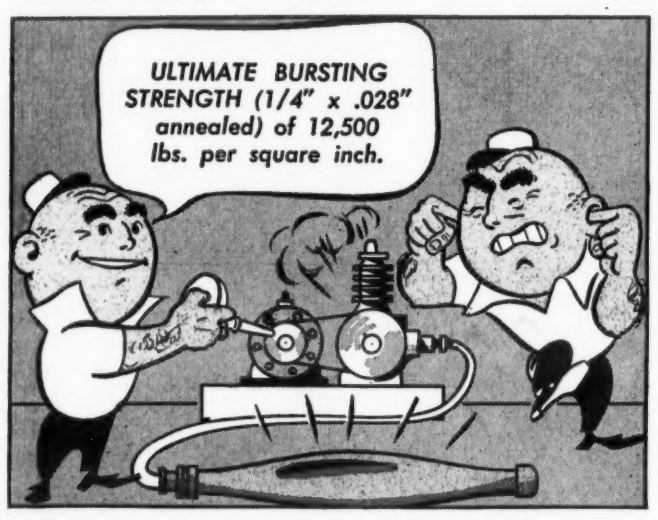

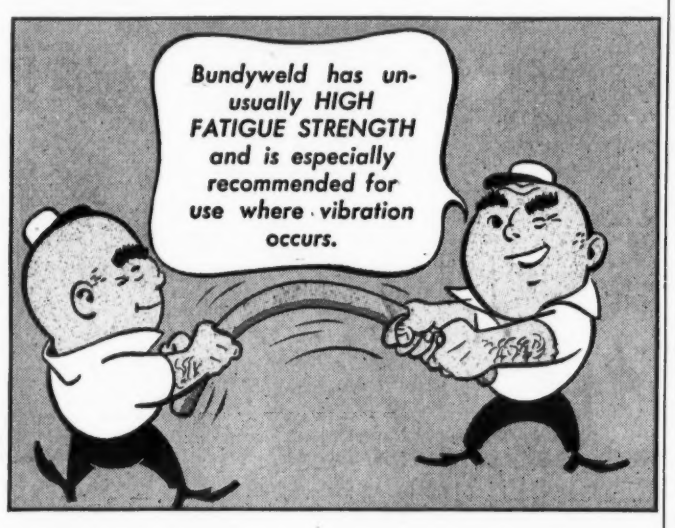

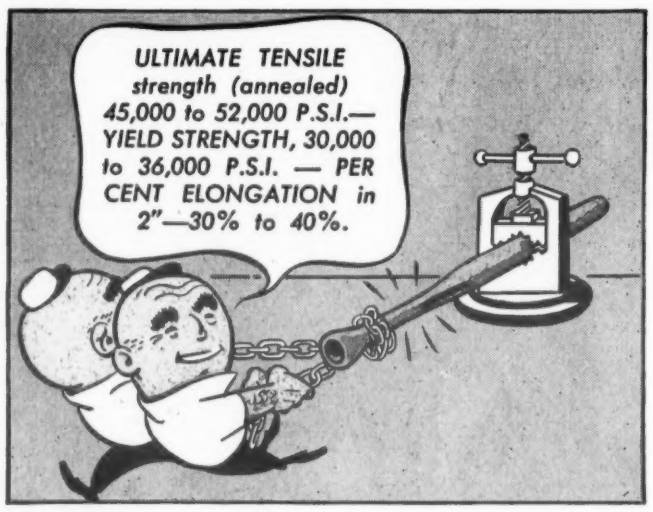
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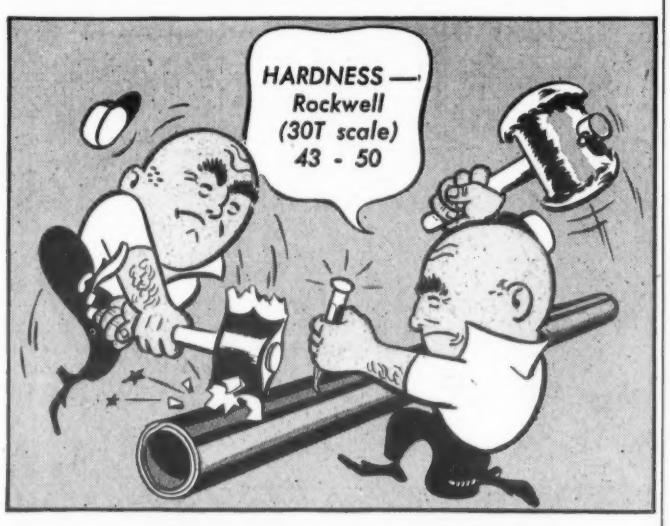

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Contractor's Load Calculations Dispute Agency's 'Exceedingly Optimistic' Claims

Buensod-Stacey, Inc.
New York, N. Y.

Editor:

The claims of the War Assets Corp., in its recent release on the merits of activated carbon as an accessory in air conditioning systems, are exceedingly optimistic and might even be classed as deceptive. While it is true that activated carbon can and has performed useful functions in air conditioning systems, there is no proven justification for the broad statement that with its use "only about one-fifth as much initial equipment apparatus would be needed to provide air conditioning for a building and that operating costs thereafter would also be 75 or 80% less than under present installations."

That is a tremendous saving, and, frankly, the War Assets Corp. release is so worded as to convey the impression that such economy could be realized on the general run of air conditioning systems. That is not true.

In comfort air conditioning, which is one of the largest uses, and representative of many other applications, general practice, good from a ventilation standpoint, results in about 20 to 25% outside air and 80 or 75% recirculation.

Assuming a maximum outside condition of 95° D.B. and 75° W.B. and inside of 80° D.B. and 50% R.H., the average condition of the air supplied to the room is about 59° D.B. and 57° W.B. The internal load is (30.8 — 24.2) = 6.6 B.t.u./lb. of air supplied.

The additional load due to ventilation is 20 to 25% of (37.7 — 30.8) = 1.38 to 1.73 B.t.u./lb. of air supplied. Therefore, if no ventilation is used the refrigeration load and equipment would be 75 to 72% of standard good practice; not one-fifth. The actual saving, however, is less, because there are ventilation considerations other than odors and because good practice requires appreciable outside air anyway to offset infiltration.

This is the economy at peak conditions. It becomes less, approaching zero in this typical installation, as the outside wet bulb temperature approaches 67°—the inside wet bulb. Against this must be balanced the added cost of the carbon equipment and the additional servicing plus increased static pressure on the fan.

Even if 100% outside air were used, the refrigeration requirement at peak outside conditions would be 13.5 B.t.u./lb. of air supplied as against 6.6 B.t.u./lb.—a ratio of 2 to 1. But the total air in circulation is determined by cooling requirements not ventilation requirements. Ventilation is a separate function, averaging about 20 to 25% of the cooling requirement. It is, therefore, erroneous to use 100% ventilation in evaluating the economies of activated carbon in the normal air conditioning system.

In winter lower inside temperatures are maintained than in summer —72° being a good average. With a net internal heat load, the temperature of the supply mixture will be less than 72°. Assuming a 62° supply for midseason requirements and 20% outside air, it then becomes obvious that with 80% at 72° and a mixture of 62°, the outside air temperature may go as low as 21.5° before heating is required.

Whenever there is a net loss of heat from the building, due to transmission, infiltration, etc., this must be made up by the heating system whether or not carbon is used.

Air conditioning problems, of course, vary widely, and there are some special applications involving odor, ventilation, or temperature extremes, where activated carbon should be considered by the air conditioning engineer. But the average air conditioning engineer has not been so delinquent as to overlook for 25 years an economy of the magnitude indicated by this release of the War Assets Corp.

A. C. BUENSOD,
President
R. W. WATERFILL,
Vice President

Manufacturer Says War Assets Corp. Release 'Is Badly Wrong on Two Counts'

Carrier Corp.
Syracuse 1, N. Y.

Editor:

The catch phrase and the essence of the release is:

"It is estimated that using an activated carbon only about one fifth as much initial equipment apparatus would be needed to provide air conditioning for a building and that operating costs thereafter would also be 75 or 80% less than under present installations."

This statement is most unfortunate and should not be left unchallenged. It carries the implication that it offers a black magic which will revolutionize air conditioning practice. In slightly different words, it tells the non-technical mind to wait until tomorrow to buy air conditioning because tomorrow it can be had for one fifth of its previous cost.

The news release throws no light whatsoever upon the basis upon which its conclusions were drawn—but one part of the basis was undoubtedly the comparison of a system taking all outside air with a system taking all recirculated air and removing the odors from that recirculated air with activated carbon. If that is the case, it is badly wrong on two counts.

The first is that not more than one out of a hundred air conditioning systems are designed to use all outside air. The ninety-nine or more recirculate from 80 to 90% of the total air which determines the size of air conditioning equipment, air ducts, and such parts of the system. Hence the opportunity for the greatest potential saving is limited to that of a very few installations.

The second is that the amount of refrigeration required cannot be cut more than about half for a plant which takes all recirculated air instead of outside air. The same thing is true of the capacity of the boiler plant required for winter operation although both will vary slightly depending upon the relation between internal and external atmospheric conditions.

This 50% reduction in refrigeration, however, affects only a part of the air conditioning system, that is, the refrigerating machinery. It does not affect the fans or the air ducts or the air conditioning equipment because the size of those parts is determined by the internal heat load of the building and not by the matter of whether the air is recirculated from indoors or taken wholly from outdoors.

Very roughly, the cost of the refrigerating machinery will be about one half of the total cost of the job. Hence, if we could cut costs in proportion to capacity, the gross cut that we can make is one-half of 50%, or in other words, a 25% gross saving on the system . . . and the net saving is less than 25% because odor absorbing equipment must be added as a component part of the system.

Odor absorption does have an economic place in a small part of air conditioning practice but in no case can it be expected to make anything like the saving predicted by this news release.

L. L. LEWIS, Vice President

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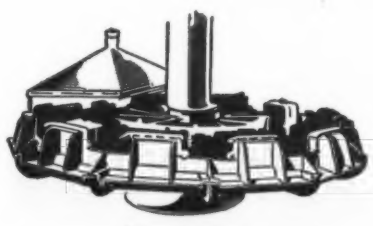

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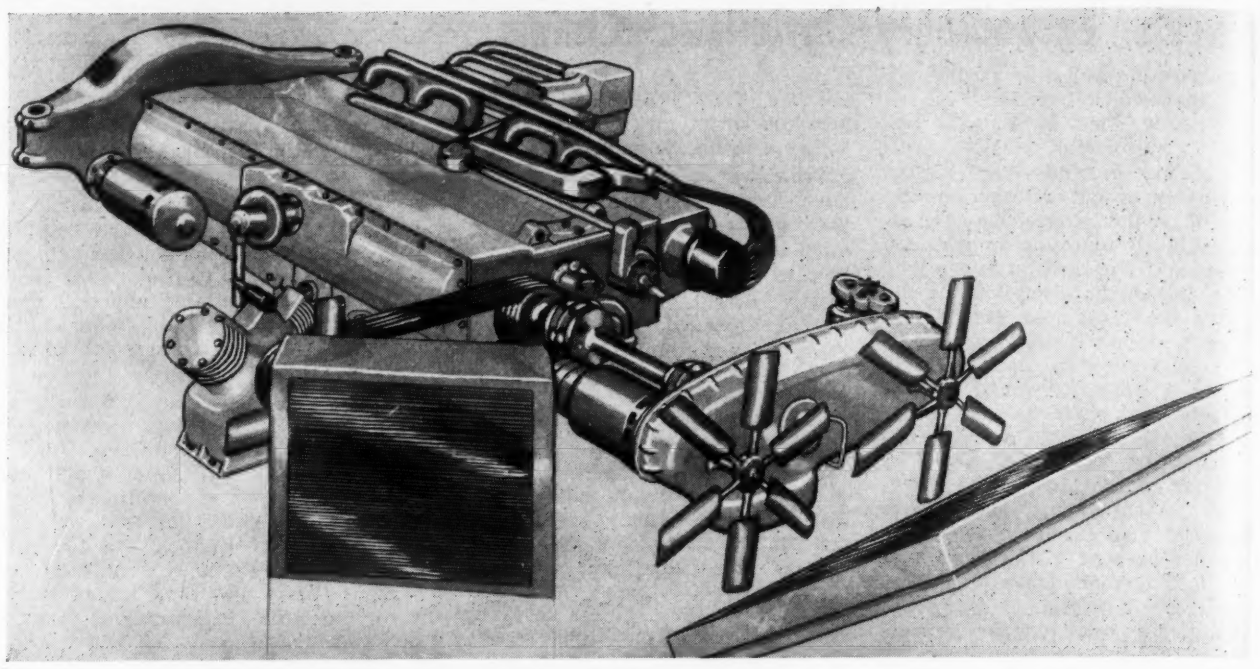
San Antonio to Get Air Conditioned Busses with Accessory Drive Shaft Connected to Engine



(Above) Two passengers show off one of the San Antonio buses wherein a panel switch near the driver controls the whole system. (At right) This sketch indicates how the use of the bus engine eliminates the need of an extra motor to power the unit.

* * *

Transit Co. Orders 100 After Test Runs of ACF-Brill 36 Passenger Model

PHILADELPHIA—By the end of this year, 100 air conditioned city buses will be transporting passengers around San Antonio, Tex.

Orders for the buses were placed with ACF-Brill Motors Co. here by the San Antonio Transit Co. following test runs of ACF-Brill's demonstrator model, described as "the first air conditioned urban bus ever built." Delivery was scheduled to begin May 5.

Development of this 36-passenger bus goes back more than three years to an idea in the minds of the transit company's executives. In planning for postwar operations, these executives reasoned that bus riding would have to be made more attractive if the heavy war patronage was to be retained.

"As a result, they proposed to bus manufacturers that they build an air conditioned bus," it was recalled by Laurence Wingerter, vice president and operations manager of the transit firm. "Reactions were skeptical.

"It was doubted that a city bus with its doors frequently opened could be adequately cooled in hot weather. But ACF-Brill accepted the challenge and with the Carrier Corp., a pioneer in the air conditioning field, constructed the first model."

This pilot model was driven to San Antonio in December last year and put through several thorough tests, including experimental operation on five routes. Public reaction was almost wholly enthusiastic.

"We are satisfied that air conditioning of city buses in San Antonio is practical," Mr. Wingerter concluded. "Our patrons expressed delight with the new postwar bus and pleasant anticipation for its comfort next summer."

The San Antonio Light reported that the demonstrator model "left in its wake surprised and pleased passengers." *The San Antonio News* quoted J. F. Chapman, director of research for ACF-Brill, as predicting that temperatures from 10 to 30° lower than the outside heat can be effected in the buses during summer use.

Installation and operation of the air conditioning system is similar to the one worked out by Carrier Corp. for ACF-Brill's inter-city bus, Model IC-37/41. This system was described in the Dec. 3, 1945, issue of the NEWS.

Main feature of these two systems is that they are operated from an accessory drive connected by a shaft to the under-floor bus engine. Prior to the war, ACF-Brill's conditioning systems in their inter-city coaches were run by auxiliary and independent motors. By using the bus engine as the source of power, the weight of the extra motor and its maintenance are eliminated.

In order to utilize space to the best advantage, the inter-city bus system has been partially rearranged in adapting it to the city bus. The cooling unit and fans in the inter-city type are located in the forward end above the driver; in the city bus, the cooler is over the rear seat.

The compressor and condenser in both systems are located underneath the bus.

Filtered, cool, and dehumidified air is distributed through both types by means of a perforated duct in the ceiling. Outside air is drawn in through ducts located just above the windows.

The system is turned on by a switch on a panel near the driver's seat and is then thermostatically controlled. An under-floor hot water heater also is controlled by a thermostat.

Known as the C-36, the city bus is available either with or without air conditioning.

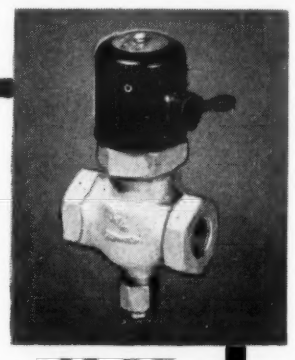
According to a company spokesman, ACF-Brill has been building inter-city buses since 1938 and pioneered in the development and production of the first quantity of air conditioned urban coaches. Carrier Corp. has been equipping railway cars and cross-country buses with air conditioning for some years.

Controlling interest in ACF-Brill and its wholly owned subsidiary, Hall-Scott Motor Car Co., of California, was purchased recently from American Car & Foundry Co. by Consolidated Vultee Aircraft Corp. for approximately $7,500,000. Consolidated Vultee is an associated company of Aviation Corp., and manufactures kitchen ranges.

It was expected that Irving B. Babcock, board chairman of Consolidated, would become chairman of ACF-Brill. R. R. Monroe, ACF-Brill president, was to continue in that office.

Mr. Babcock, who is also president of Aviation Corp., recently was elected chairman of the board of Hall-Scott. Mr. Monroe was elected president; V. C. Schorlemner and W. E. Henderson, vice presidents; R. B. Watts, secretary; and M. A. Hardie, treasurer.

For Efficient Refrigeration Use Proved and Improved Controls



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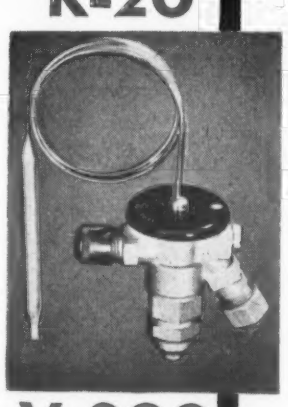
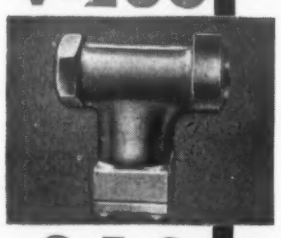
K-20



V-200



S-5-2

S-5-3

Here is efficient, unsurpassed refrigeration equipment. Specifically designed for the control of Freon, Sulphur-dioxide, Methyl-chloride and Ammonia. Also air, water, gas, light oil, etc. Suction lines or hi-pressure liquid lines.

K-15 and K-20 Series. Magnetic liquid and suction stops. The direct acting single seated needle valves and the piloted piston valves respectively. All valves are held open electrically, thus eliminating unnecessary compressor burdens. Tight shut-off for fractional tonnage installations. Features are Die-forged bodies, Hardened steel needles, Corrosion-proof internal parts, Gasketless construction, Integral mounting features, Moisture-proof high pressures. Single or dual voltage coils.

V-200 Thermal Expansion valve. Interchangeable Orifice Cartridges permit proper sizing on the job, making this literally six valves in one. Unmatched sensitivity, semi-liquid charged; may be placed in ambient temperatures higher or lower than bulb temperatures with no loss of control. Frictionless pusher-pin, ample diaphragm, plus balanced, low-rate adjusting spring. Carefully lapped hard-faced ball insures tight shut-off.

Strainers S-5 Series. The importance of suitable strainers ahead of a flow control device, such as automatic or regulating valves of any kind for long operating life, cannot be too heavily stressed. Bronze, iron or semi-steel bodies, Monel, reinforced bronze or felt screens, 3/16 to 120 strainer meshes.

For complete *specifications on these and other refrigerant controls in the broad General Controls line, write for the new 1946 Catalog 52C. Send request to your nearest Factory Branch, Distributor or Refrigeration Supply House.*

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801 ALLEN AVENUE GLENDALE 1, CALIF.
FACTORY BRANCHES: PHILADELPHIA • ATLANTA • BOSTON • CHICAGO • DALLAS
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31-1

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d-h EQUIPMENT PERFORMS BETTER ANYWHERE...

Now Western industry contributes advanced knowledge and experience to the specialized science of heat exchange. d-h equipment . . . designed, engineered and manufactured by our own organization at Los Angeles . . . is setting new standards of performance throughout the country and in many foreign lands as well.

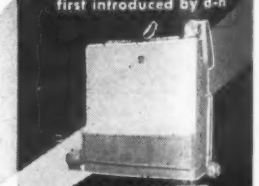
The complete line includes air conditioning equipment, refrigeration equipment, airplane exhaust heaters, air and liquid coolers, heaters, coils . . . each with outstanding qualities that invite comparison. They represent more than a generation of Western heat exchange development. Into them go thorough knowledge of heat exchange principles, expert designing for proper proportion and balance, and experience in manufacturing quality products with the finest factory facilities.

Our engineers are ready to help you solve your heat exchange problem. Perhaps the answer is ready and waiting . . . perhaps only minor adaptation of standardized equipment is necessary

Write us about your needs.

LOS ANGELES d/h SINCE 1910

SPASAVER
Horizontal type air cooler first introduced by d-h



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Evaporative liquid cooler that eliminates nine-tenths of ordinary operating costs

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Airplane Exhaust heater, a leader in its field

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Revolutionary type water cooler of unequalled efficiency

drayer-hanson INC.
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THE FIRST AND ONLY FACTORY OF ITS KIND IN THE WEST WITH COMPLETE FACILITIES FOR ENGINEERING, DESIGNING, MANUFACTURING, HEAT EXCHANGE EQUIPMENT

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ENJOY THESE MULTIPLE ADVANTAGES IN

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★ DIVERSIFIED INCOME

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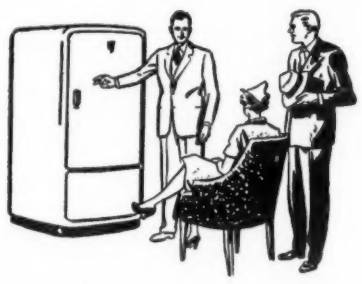
THE GREAT CHICAGO MARKET

★ VOLUME PURCHASES

★ EXPERIENCED RETAILERS

★ EASILY ACCESSIBLE

Greater DEMAND



Would you like to get *double duty* out of your first year's factory production? Do you want quick distribution and a solid sales set up?

Then take advantage of the $4,496,734,000 Chicago market—a rich, compact area quickly accessible to factory shipments and salesmen alike. Here is a market famous for its big volume purchases, one which has repeatedly broken factory and branch sales records.

Here is a huge, pent-up demand for radios, washing machines, refrigerators, "big unit" products generally, that invites attention.

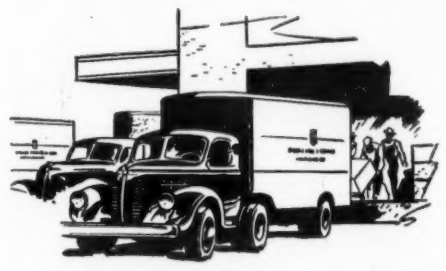
Greater COVERAGE

You can help solve your selling problems by getting going now in this great market with a single advertising medium—the Chicago Tribune.

One out of every three families in 756 cities and towns of 1,000 or more population in the Chicago area reads the Tribune on weekdays. On Sundays, it is practically every other family.

This intensive coverage is yours at one of the lowest milline rates in America. In addition, the Tribune offers you a choice of monoroto, coloroto, comicolor, newsprint color or black-and-white printing—whichever helps you most.

Greater SALES



No matter whether your production is large or small, the Chicago market will reward your attention as the place to get the sales you want.

It is fortified by diversified income and billions in savings. Here is more business than in 13 states combined.

For quick sales and solid dealer and consumer preference when the first easy selling conditions pass and the competition gets tough, build your program around the power of the Chicago Tribune. Now is the time to get started in a major market located at the nation's crossroads!

Available for your study and use is a specific Tribune sales program based on the findings of an auto and household appliance investigation among dealers and consumers.

CHICAGO TRIBUNE
THE WORLD'S GREATEST NEWSPAPER

January average net paid total circulation:
Daily, over 1,025,000; Sunday, over 1,400,000.

To get the pertinent facts of the Tribune sales program, address: C. S. Benham, Manager, National Advertising, Chicago Tribune, Tribune Tower, Chicago 11, Illinois.

They'll Do It Every Time . . . . By Jimmy Hatlo

GOOD OLD BIG BEN WILL HAVE BEEN HERE 20 YEARS NEXT WEEK. WE WANT TO SHOW HIM OUR AFFECTION. IF EVERYBODY CHIPS IN FIVE BUCKS WE CAN GIVE HIM A $500 WATCH. OF COURSE, WE'LL ALL SIGN A CARD SO HE'LL KNOW WHO GAVE... AND...AHEM... WHO DIDN'T GIVE...
COUGH UP, WORMSLEY... YOU'RE HOOKED. JUST A LITTLE SOUVENIR TO A GUY MAKING 20 GRAND A YEAR FROM THE OFFICE BREADLINE
A $500 TICKER? ALL OF US PUT TOGETHER DON'T DRAG DOWN THAT MUCH DOUGH IN A MONTH...
WORMSLEY COULD INVEST FIVE BUCKS MORE ADVISEDLY, REINFORCING THE SEAT OF HIS PANTS
PERSONALLY, I'D LIKE TO SEE HIM GET A NICE TIMEPIECE, IF IT WAS WIRED TO A ONE-TON, DELAYED BOMB...
TO BIG BEN FROM THE GANG
SALES MANAGER
FINAL NOTICE GLUT LOAN CO.
JIMMY HATLO
TAKING UP A SLIGHT COLLECTION FOR ONE OF THE OFFICE BRASSHATS
Thanx TO DAN DONNELLAN, NEW YORK, N.Y.
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☆ *Buy VICTORY Bonds* ☆

You can add a department RIGHT NOW

IF you need more production NOW . . . production which will not wait while construction is planned, materials obtained and man-power found and trained . . . here's how you can add a department *right now.*

Call Hupp, an experienced contract manufacturer.

Hupp's plants in Detroit and Cleveland are now serving a blue book list of manufacturers—working with them as a closely integrated part of their own facilities.

In Detroit, the Hupp Machining Division has modern machining and assembly facilities set up on a straight-line, mass production, efficient cost basis, planned from its heritage of more than thirty years' experience as one of America's leading motor car manufacturers. In Cleveland, the Globe Stamping Division has for over forty years provided facilities recognized by many industries as a dependable source for high production stamping, rolling, welding, painting and assembly.

Hupp's plants are manned by loyal, experienced, organized craftsmen who also realize the importance of meeting production schedules. There has never been a work stoppage at Hupp.

To meet your urgent production problems, Hupp offers you men, machines, and management—your department, *right now.*

Call Hupp, an experienced contract manufacturer.

HUPP
MOTOR CAR
CORPORATION
★
HUPP MACHINING DIVISION - DETROIT
GLOBE STAMPING DIVISION - CLEVELAND

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AIR CONDITIONING AND REFRIGERATION News

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F. M. COCKRELL, *Founder*

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What Is Purchasing Power?

FREQUENTLY we hear the argument that higher wage rates are needed to create or sustain "purchasing power." Example: The brief supporting the demand of the United Automobile Workers, CIO, for a wage increase of 30% from General Motors Corp., was entitled "Purchasing Power for Prosperity."

Similar arguments have been used by Government officials in explanation of their open espousal of the case for higher wages in general. Their position in this respect is not related to the question of the fairness of the workers' demands, but is based on the view that it is desirable in the public interest to maintain purchasing power.

It is rather difficult to reconcile such arguments by public officials with statements emanating from the same sources to the effect that the nation's greatest problem is inflation.

If price stability is threatened by a tremendous volume of accumulated purchasing power, so that prices must be kept under ceilings, and citizens must be urged to buy savings bonds instead of spending their money, why must wage rates be raised in order to sustain or increase the purchasing power that is already present in excessive amounts?

Quite aside from the question of timing, however, the whole purchasing-power theory rests upon very uncertain ground. The idea that purchasing power is one thing and production another, and that purchasing power must be stimulated by some extraneous influence in order to stimulate production, is contrary to long-tested experience.

If a wage increase in some particular industry is accompanied by a proportional rise in the price of the product, the purchasing power of the workers in that industry is increased *with respect to other products;* but at the same time the purchasing power of other consumers is reduced with respect to the product that is now higher in price. So, there has been no change in aggregate purchasing power.

If the proportional increase in wages and prices spreads throughout industry, workers obviously gain nothing, since their cost of living rises with their wages.

Most employers do gain something, because they operate partly with borrowed money, and the cost of the money they have borrowed does not increase with their other costs.

This gain, which is shared by debtors in general, is achieved at the expense of creditors, whose incomes remain fixed while their costs rise.

Total purchasing power in terms of money has increased; but real purchasing power—that is, purchasing power over goods and services—is still unchanged. What has taken place is merely an inflation of the whole wage-price structure.

At this point there is a failure to distinguish between purchasing power in terms of money on the one hand and real purchasing power on the other.

Total purchasing power in terms of money can be increased very easily in a number of ways—as, for example, by printing more money; but the ultimate effect of such an increase is merely to inflate prices, with some redistribution of real purchasing power but with no direct change in its aggregate amount.

Real purchasing power can be increased in only one way—by an increase in production.

The present concern over purchasing power, however, is not based solely on crude fallacies such as these. Some thoughtful students of business affairs believe that total savings will provide more new capital than industry can absorb.

Under such conditions, some of the savings would necessarily be hoarded, since there would be no other employment for them.

Neither on theoretical nor statistical grounds is the evidence for the new theory impressive. Certainly it is far from sufficient to warrant a governmental wage policy at this time that is proving a threat both to reconversion and to price stabilization.

Cherry-Burrel Offers 40,000 Preferred Stock Issue at $100 Par

PHILADELPHIA — With a par value of $100 per share, 40,000 shares of cumulative preferred stock was registered with the Securities & Exchange Corp. by the Cherry-Burrell Corp., manufacturer of dairy plant equipment and supplies here.

Of the 40,000 shares, the company is offering 13,549 shares to holders of its 13,549 shares of 5% dividend series preferred on a share-per-share basis, plus a cash adjustment, it was announced.

The exchange offer is said to be a step in a plan of recapitalization of the company.

According to the plan, 26,541 shares of preferred, together with the shares not issued in exchange for old preferred, are to be sold to underwriters, who will offer them to the public at a price to be filed by amendment.

The underwriting group is headed by Illinois Co., Chicago.

United Fruit Adds New Refrigerated Cargo Ship

NEW YORK CITY—A new vessel, the Comayagua, was recently added to the United Fruit Co.'s postwar fleet of refrigerated cargo and passenger ships. Having an over-all length of 455 ft. and a displacement of 12,890 tons, the new craft has a cargo capacity of 320,000 cu. ft. and a speed of around 20 knots.

The Comayagua's five sister ships are now engaged in delivering perishables for the government.

Carrying "reefer" cargoes for the armed forces, the Fra Berlanga, Limon, San Jose, and Esparta make trips back and forth between West Coast ports and the Southwest Pacific and Japan. The other ship, the Junior, carries similar cargoes from here to Germany.

Air Conditioning Discussed By Buffalo Home Planners

BUFFALO—The fourth meeting of the Buffalo Home Planners Institute was devoted to a discussion of heating and air conditioning for the home.

Carl Millsom, regional manager of the Airtemp Division of the Chrysler Corp., discussed "How to Plan Your Heating and Air Conditioning for Comfort, Efficiency, and Health."

A panel of heating and ventilating experts participated in the discussion as representatives of the Indoor Climate Institute. They were Walter E. Voisinet, Lawrence J. Monahan, Charles L. Turner, and David F. Harned.

Detroit Gas Conversion Burner Sales, Installation to be Under Safety Code

DETROIT — Sellers and installers of gas conversion burners, a business which has mushroomed tremendously here in the past six months, will be subject to a new city safety code now being prepared, members of the Indoor Climate Institute's Detroit chapter were informed last week by Joseph P. Wolff, commissioner of the Department of Buildings & Safety Engineering, City of Detroit.

To assist in the preparation of the code, Mr. Wolff asked that a representative committee be appointed by the I.C.I. chapter to present viewpoints of contractors, engineers, control manufacturers, and others.

"There is a big danger connected with the careless installation of gas heating units, and at present we have no regulations regarding these units," said Mr. Wolff, who estimated that perhaps two-thirds of the 4,000-odd conversion burners now installed in Detroit may have to be altered to conform with safety features of the proposed code.

"Some people are convinced that the new code should provide for licensing of contractors, but I don't share those views," explained Mr. Wolff. "I don't like too many controls, myself."

Mr. Wolff's thought is to write the proposed ordinance to require individual permits for the installation of the gas conversion units and then follow by city inspection to assure the installations' meeting the code's safety requirements.

"Installations now in will have to be inspected, and if the burners don't conform to the proposed ordinance they'll have to be corrected. The owner will probably have to pay for the changes," he said.

Membership of the I.C.I. was apparently about evenly divided on the question of licensing contractors. Some contractors declared that a licensing provision would go a long way toward insuring that only qualified men would install burners and thus would improve the general qaulity of such jobs.

Other contractors took the stand that inspection, not licensing, was the best way to guarantee safe installations, and while licensing would help the main thing was proper inspection of jobs.

390 More Lockers Scheduled

HICKMAN, Neb.—A total of 250 frozen food lockers will be included in a new super market being constructed here by Harold F. Devries. Refrigeration will be supplied, he said, by a General Electric system with water-cooled compressor. Space in the 160 x 50 ft. building is being provided for 150 additional lockers.

The frozen food locker plant operated at Holland, four miles from here, by Thomas and Edward Hayman has been enlarged to include 140 more lockers.

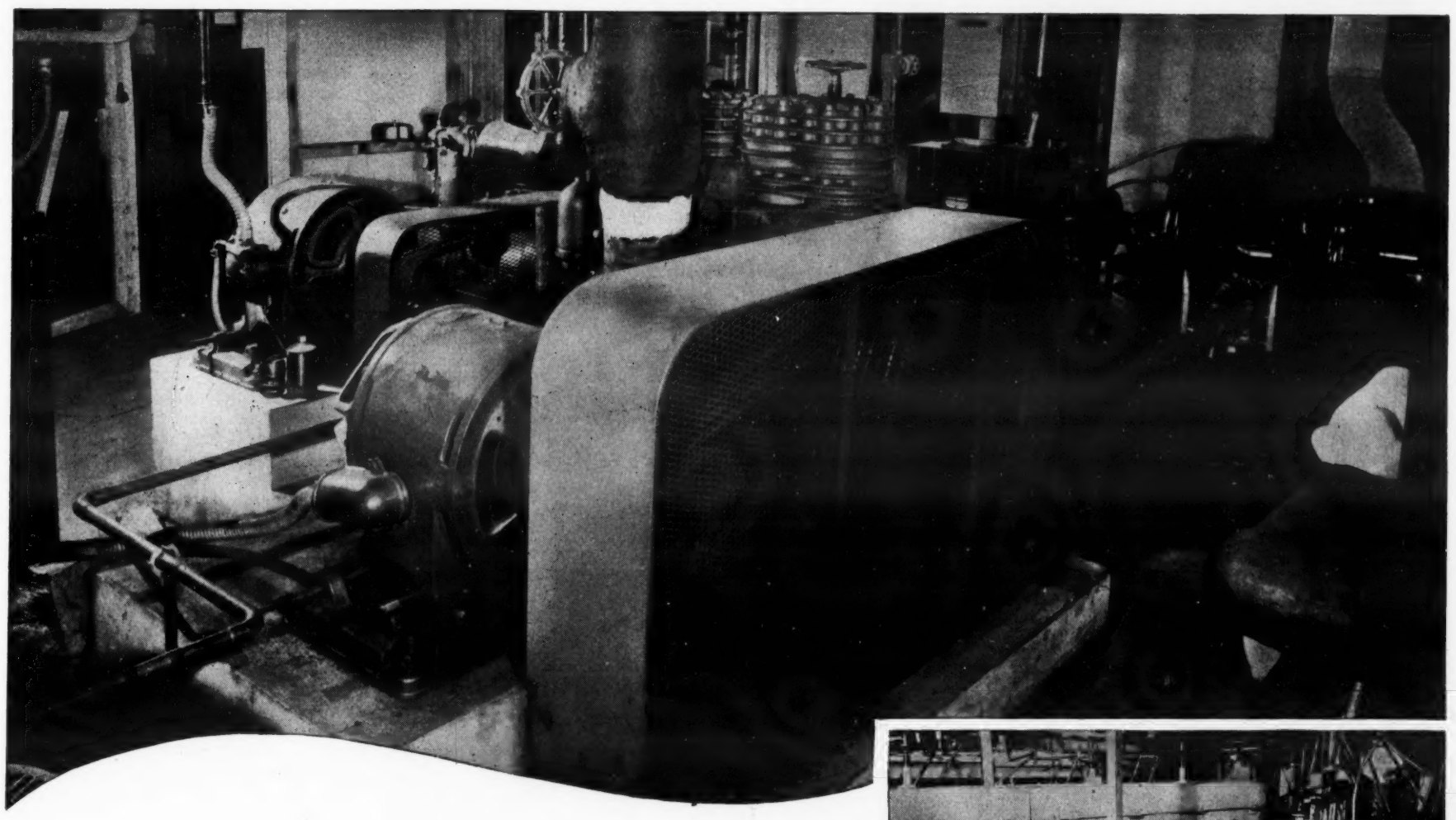
2 Nebraska Appliance Firms Are Incorporated

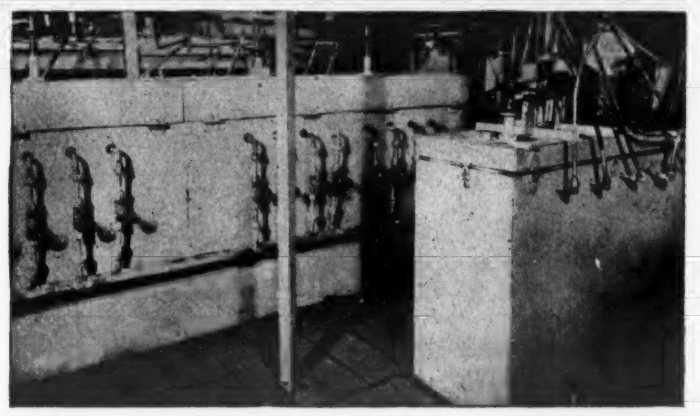
OMAHA, Neb.—The Elliott Appliance Co., Inc., here, and the A.B.C. Electric Co., Inc., of Lincoln, are among the most recent home appliance and service firms to file articles of incorporation in Nebraska. Elliot Appliance, with a capitalization of $25,000, will deal in refrigerators, radios, and phonographs. Incorporators are John C. and Verna B. Elliott, and Fay E. Maxon.

A. B. and A. J. Whitmer have combined with Paul Allyn to form A.B.C. Electric Corp., which has $100,000 capital stock.

Service Shop Opens in B. C.

NELSON, B. C., Canada — F. C. Stewart is opening an electrical repair and refrigeration service business at 301 Nelson Ave., Nelson, B. C., under the name of Pete's Refrigeration & Electrical Repair Service.





(Top)—General view of the Carrier Refrigerating Installation in The Johns Hopkins laboratory.

(Below)—The condensing box in the work area.

How "Freon" speeded development of the "Manhattan Project"

In 1942, The Johns Hopkins University required extreme low temperatures for its research in connection with the now famed "Manhattan Engineer Project."

A special condensing installation presented the problem of eliminating a condensable, highly corrosive material from a permanent gas stream, itself dangerous. Chemical purification was impractical. Quantities of material to be handled made the cost of solid carbon dioxide prohibitive. "Freon" safe refrigerants solved the problem.

The original unit consisted of a two-stage "Freon-12" system installed by the Carrier Corporation. In this, methylene chloride was cooled to −60°C., then circulated to the work area by motor-driven pump. The methylene chloride flowed around a series of corrosion-resistant coils in which condensation took place. Refrigeration capacity was 1.5 tons.

Increased demands for the material being made necessitated doubling the capacity of the unit. Lower temperatures were also required. "Freon-22" was accordingly substituted in the two-stage cycle and a third stage added. The top-stage utilized "Freon-12" with a standard water-cooled condenser. The Director of The Johns Hopkins Project wrote:

"Thanks to availability of "Freon-22," the change-over was accomplished with minimum re-piping and without excessive loss of time during the shut-down. Complete success was achieved. Temperatures as low as −80°C. were easily reached, with capacity of three tons at this temperature. Without this installation the work would have been seriously delayed."

As with the "Manhattan Engineer District," low-temperature demands in *any* industry—whether for research or production line operations—are readily met with dependable "Freon" refrigerants. These safe and efficient refrigerants are non-toxic, non-flammable and non-explosive. Prominent refrigerating engineers everywhere approve them. Write for complete information. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware

CHARACTERISTICS OF THE "FREON" FAMILY

Type	Boiling Point	Critical Pressure
"Freon-11"	74.7°F.	635 lbs. in sq. in. abs.
"Freon-12"	−21.6°F.	582 " " " " "
"Freon-21"	48.0°F.	750 " " " " "
"Freon-22"	−41.44°F.	716 " " " " "
"Freon-113"	117.6°F.	495 " " " " "
"Freon-114"	38.4°F.	474 " " " " "

KINETIC

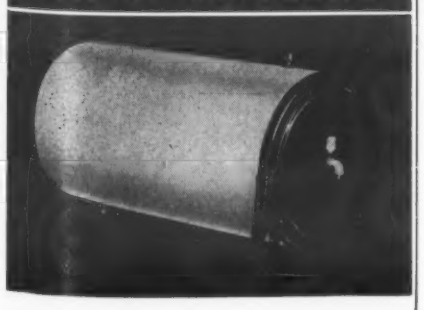
FREON

REG. U. S. PAT. OFF.

safe refrigerants

"FREON" IS KINETIC'S REGISTERED TRADE MARK FOR ITS FLUORINE REFRIGERANTS AND PROPELLENTS

NORMAL SUCTION PROCESS WATER COOLERS



6 to 25 gallon capacities.

Compact in design...can be mounted on floors, walls or ceilings.

Suitable for drinking water bubbler service, cafeteria or restaurant glass filler service.

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Dallas Code Hits 'Uninspected' Appliances, Calls For Registration of Repair Shops

DALLAS, Tex. — Under a new electric code which recently went into effect here, Dallas is acting to remove from the local market many inferior electrical appliances said to menace life and property.

Regulation of repair shops and their personnel also is provided by the new municipal code, which was held particularly necessary to meet conditions resulting from the war. Inexperienced persons, local officials claim, are engaging in both manufacture and servicing of electrical appliances.

Sale of electrical equipment not approved by the city's chief electrical inspector is prohibited by the new code. It was announced Feb. 11 that letters were being sent to stores selling electrical appliances asking them to rid themselves of unapproved products, and that city inspectors would soon begin checking the stores.

WHAT IS APPROVED

All electrical equipment approved by Underwriters Laboratories, Inc., which lists some 150,000 approved items, is approved automatically by the city, under the new code. All other equipment must be submitted to the city electrical inspector for approval.

Merchants will be given a reasonable time to dispose of unapproved equipment on hand before rigid enforcement of the new code is started, it was announced by M. D. Darrah, city electrician. He added, however, that sale of any items discovered to be particularly dangerous would be banned immediately.

The new code also requires registration of all electrical repair shops, including radio repairers, and the licensing of repair workers. Those not already holding licenses must undergo examination. Letters were being sent to all repair shops calling attention to the new code and setting a time limit for registration and licensing.

"A lot of small companies which have not had the necessary experience are turning out electrical appliances to meet the big demand," Mr. Darrah said. "We are scared to death that this is going to result in heavy fire damage and loss of life in homes of the city."

Displaying a burned electric cord used to wire a new fluorescent bed lamp, he said: "This kind of cord has caused four fires in Dallas that we definitely know about. Instead of using a transformer as he should, the manufacturer saved about $2 by using a resistance cord to cut down the voltage to the lamp. The cord gets hot; sometimes hot enough to start a fire. It is highly dangerous."

Several retail stores in Dallas removed such lamps from sale when the danger was pointed out by city inspectors, he said.

'WAR WORKER' REPAIRMEN

Another war-produced hazard, Mr. Darrah said, is the work of a large number of unqualified persons from war plants who have entered the electrical repair business.

"On aircraft plant production lines, for instance," he said, "a girl who did nothing but solder connections on wires already laid out for her, might have been classed as a first-class electrician. She has no qualifications whatever for repairing electrical equipment. Yet such persons are setting up electrical repair shops."

Mr. Darrah estimated that "about half of the fires in Dallas chargeable to electricity are caused by faulty electrical appliances."

Allis-Chalmers Names Man To Contact This Industry

MILWAUKEE—O. P. Donohue has been elevated to the sales promotion staff of the Allis-Chalmers Mfg. Co. to specialize in the air conditioning, ventilating, and heating industries following his recent release from the Navy, announced P. F. Bauer, manager of industrial sales, general machinery division.

Prior to his service in the Navy, Mr. Donohue joined the Allis-Chalmers company in 1941, and was engaged principally in serving the heating and ventilating fields in the company's product departments.

Carrier Gets Order To Equip 31 Locker Plants In North Carolina Chain

SYRACUSE, N. Y. — Orders for refrigeration equipment for 31 frozen food locker plants, part of a statewide North Carolina chain, have been placed with Carrier Corp. dealers by the Southern States Food Locker Co. of Raleigh.

Equipment for nine other similar plants now under construction had previously been placed with Carrier. All are scheduled for completion by June 1.

Housed in Colonial type buildings, each of the plants will have 1,000 frozen food lockers each with a capacity of from 250-300 pounds of food. They will be rented to farmers and others for storage of surplus fresh meat until wanted for consumption. A large business is expected also from game hunters who wish to save their bags for future use.

Each of the plants will cost approximately $65,000 and lockers will be rented at an annual rate of $14 to $18. Part of the service of each locker plant will be complete processing by a skilled butcher of family size cuts of meat to be drawn from storage as the occasion requires. In addition, complete curing and smoking equipment is installed for hams and bacon and lard rendering.

Kentucky Gets Proposal To License Locker Plants

FRANKFORT, Ky. — A bill to license and regulate operation of frozen food lockers has been introduced in the Kentucky Legislature.

The state agricultural commissioner would administer the proposed law. Locker operators would be required to pay annual $10 license fees. Violation would constitute a misdemeanor, carrying a fine of $50 to $100.

Listed as House Bill No. 303, the bill asserted that "the public welfare requires" regulation of operation of refrigerated lockers and "of the sale, handling, and processing" of food and persons handling it.

Six New Distributors For Iceberg Units Named

NEW YORK CITY—Six new distributors of Iceberg frozen food storage units have been appointed by Iceberg Refrigerated Locker Systems, Inc.

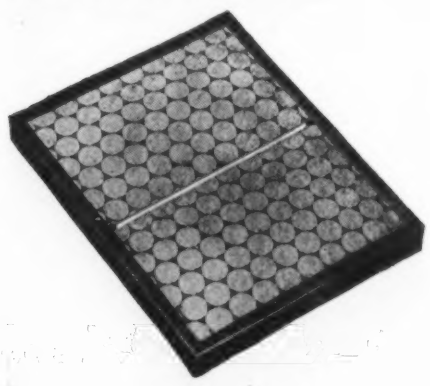
They are: Rhoads Refrigeration & Store Equipment, Ft. Wayne, Ind.; Arthur Boot Co., Grand Rapids, Mich.; James & Roach, Detroit; Johnson Furniture Co., Mitchell, S. D.; Cumberland Sales Co., Inc., Nashville, Tenn.; and Refrigeration Suppliers, Inc., Norfolk, Va.

What's the CENTS of Air Filtering?

It makes sense to obtain the advantages of filtered air *economically*. Air filtering is an important part of many manufacturing processes. It makes the difference between profit and loss for countless commercial concerns. It assures greater comfort and cleanliness for millions of people. And when DUST-STOPS* are in the heating and air conditioning systems, it is a clear indication that filtered air is being obtained at both low initial and low maintenance costs.

PENNIES FOR DOLLARS

Where filtered air has a dollar value, architects, heating and ventilating engineers specify DUST-STOPS and the complete ready-to-assemble steel frames as a sound investment.



The widespread preference for these replacement-type filters is based on their ready adaptability to any system, regardless of the cfm requirements; on flexibility of installation; easy access to filters; and the low cost of this part of the system.

WIN ON INITIAL COST

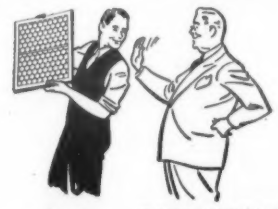
DUST-STOP Air Filters are highly efficient—are readily available at low cost from near-by suppliers.

DUST-STOPS are constructed of packs of glass fibers (Fiberglas*) coated with an adhesive and bound on the edges with a fiberboard frame.

The Fiberglas fibers, packed to proper density, form an exceptionally effective medium for air filtration. Being glass, they are inorganic, chemically stable, resistant to heat, corrosive vapors and being glass, they do not absorb the nonodorous, nonevaporating adhesive with which they are coated. Each impinged particle of dust is quickly soaked, acting as a wick to carry adhesive to other particles. Thus, the adhesive remains effective until the filter is so heavily loaded with dust that resistance to air flow calls for replacement.

WIN ON MAINTENANCE

Maintenance and replacement are accomplished with a minimum of man power and time. DUST-STOPS can be quickly obtained from near-by suppliers. And replacement requires no special tools or experience.



If you do not have complete information on DUST-STOP Air Filters, or typical installation details, see Sweet's Files or write:
Owens-Corning Fiberglas Corp., 1848 Nicholas Bldg., Toledo 1, Ohio
In Canada: Fiberglas Canada Ltd., Oshawa, Ontario.

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Home of the Future?

Central Boiler with High Temperature Liquid Supplies Energy for Appliances

NEW YORK CITY—Using a high temperature liquid with a boiling point of 825° F. at atmospheric pressure as a heat transfer medium from a central heat source, the John B. Pierce Foundation has developed an experimental domestic system which provides refrigeration, heating, water heating, cooking, baking, broiling, frying, ironing, and even the generation of electricity—all from the single heat source.

Details of this development were outlined before the national meeting of the American Society of Heating & Ventilating Engineers here by Orion O. Oaks, chief engineer of the foundation.

Among the advantages seen for this method, which would replace the conventional system requiring three or four types of heating equipment, are economy and efficiency of operation, according to Mr. Oaks.

100% EFFICIENCY SEEN

"The underlying reason for possible savings when using the liquid heat consolidated unit is the fact that all energy conversions are 100% efficient excepting the primary generator," he explained.

"By concentrating on the efficiency of this primary generator and reducing the loss through radiation by utilizing improved types of insulating materials, transmission losses are reduced to a minimum, and the overall efficiency of the entire equipment is raised to at material extent."

Efficiency of the boiler or primary generator in the experimental setup was well above 80% because of heat exchange in the economizer and air preheater, according to Mr. Oaks.

The name of the liquid heat transfer medium is tetracresylsilicate. It has a boiling point between 817° and 825° F. The solidifying point has not yet been determined, but the liquid does become vicous at 65°. At 70° F. it has a viscosity similar to SAE 20 and is extremely fluid at temperatures above 100° F., stated Mr. Oaks. It is also said to be non-poisonous, non-corrosive, non-explosive, and non-toxic. Specific gravity is 1.13 and specific heat, 0.43.

Included in the experimental installation at the Pierce laboratory were a boiler, refrigerator, unit heater, steam generator, cooking units, and ovens.

The boiler was liquid-tube, liquid-wall type with a built-in economizer and built-in air preheater.

HOUSE HEATING PLANT

"The house heating unit may be of the liquid-tube, air-heating type with all the necessary and customary features, such as humidifier, air filter, circulating fan, and, if desired, a cooling and dehumidifying coil for summer cooling," explained Mr. Oaks.

"This unit, which is under complete automatic control, is contained in a complete housing and may be located at any convenient point in the building. Hot water radiators, steam radiators, convectors, or radiant heating are a few of the means by which heating may be accomplished. Radiation and convection from direct circulation of the liquid through any desirable form of heating surface could also be used for heating."

The refrigerating unit is a standard absorption machine which is adapted for use with liquid heat by the substitution of a hot liquid coil in place of the conventional heat source.

Hot water is supplied from a unit that is in the form of a heat exchanger with submerged hot liquid coils, and may be of the tankless, instantaneous type or the storage type.

Metal points of various sizes depressed in an insulated working table comprise the cooking unit.

"Fitted to these metal pots are cooking utensils or liners which are provided with insulated metal covers," said Mr. Oaks. "Set flush with the work table are a service hot plate and a flat surface griddle to be used for all surface cooking and frying. A small sink is incorporated in the work table for convenience in food preparation.

"The baking unit, which may be located separately or built into the work table, consists of a compartment, or compartments, conforming to standard oven dimensions and is provided with raise-up or open-out flush mounted doors as desired.

"The grilling of steaks, chops, or other meats is accomplished by placing them in close proximity to the ceiling of the oven, in which position results are obtained identical with, if not superior, to any other methods in current use," asserts Mr. Oaks.

'FOOD IS SUPERIOR'

"Due apparently to the exclusive use of radiant heat, the foods are very uniformly cooked and possess a flavor and texture superior to foods cooked by other methods," he said. "This statement is made solely upon the basis of comments of laymen and experts who have eaten the food cooked by liquid heat. In general, the time required for cooking is approximately 50% of that required by conventional methods."

The ovens, according to Mr. Oaks, can be equipped to be used also as a dishwasher. The heated surface would be utilized for rapid production of steam and boiling water, which is sprayed over the dishes. Then, after rinsing, the oven would serve as a drying device.

Toaster used in the experiments consists of a jacketed tunnel through bread is conveyed. Speed at which the bread passes through the tunnel determines the degree of toasting.

"The time required for raising the various units from a cold condition to a working temperature varies from 30 seconds in the case of cooking pots, griddle, service plate, and toaster to two minutes in the case of ovens," reported Mr. Oaks.

WIDE ADAPTABILITY

The number and size of the various units can be varied to meet the requirements of a small home or a large institution, restaurants, hotels, etc., believes Mr. Oaks.

Incorporated in the system is an expansion tank to allow for the expansion of the liquid as it is heated. A motor-driven centrifugal pump is employed to circulate the liquid heat transfer medium, and since the system operates at atmospheric pressure, the pump has only to overcome frictional resistance through the lines, pointed out Mr. Oaks.

Control of the individual units in this system is effected by three-way modulating liquid valves. These automatic controls had to be specially developed for the experimental installation, said Mr. Oaks.

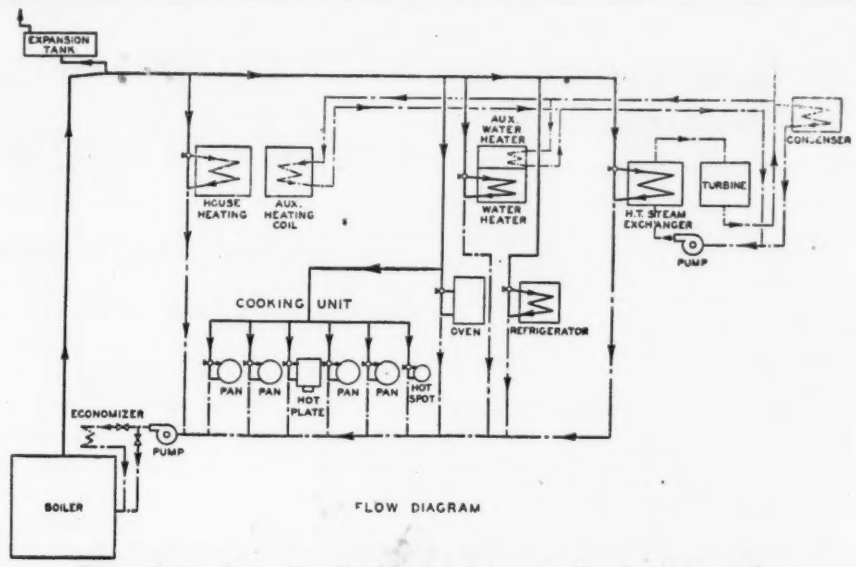
In connection with a liquid-filled expansion system these valves bypass all or any part of the flowing liquid around any unit as the temperature of the unit rises, and pass more of the hot liquid through the unit as the temperature falls. The temperature setting of the unit may be varied at will or shut off entirely by the operator.

"After setting this automatic control, the temperature of the unit is held within close limits as long as the flow of the hot liquid continues. The temperature of the hot liquid circuit from the boiler is maintained constant at any desired point," explains Mr. Oaks.

"The boiler control operating the fire or the firing device is responsive to the temperature of the outgoing liquid. By this procedure any unit may be operated at a different temperature from any other unit or may be turned off completely.

"The materials used in the construction of the apparatus may be selected from a wide range of types, as they are limited only by their ability to withstand heat within the temperature range.

"The boiler, piping system, and the various units may be constructed of either ferrous or non-ferrous materials, as experimental data collected to date indicate no action by the liquid upon any metal other than that due to temperature. Joints may be either welded, screwed, flanged, or brazed."



FLOW DIAGRAM

This shows how the liquid circulates to the heating units.

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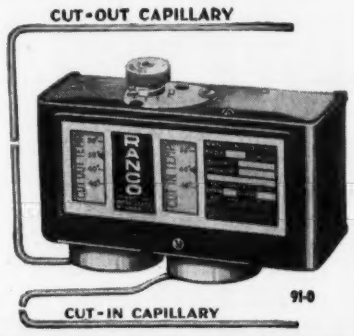

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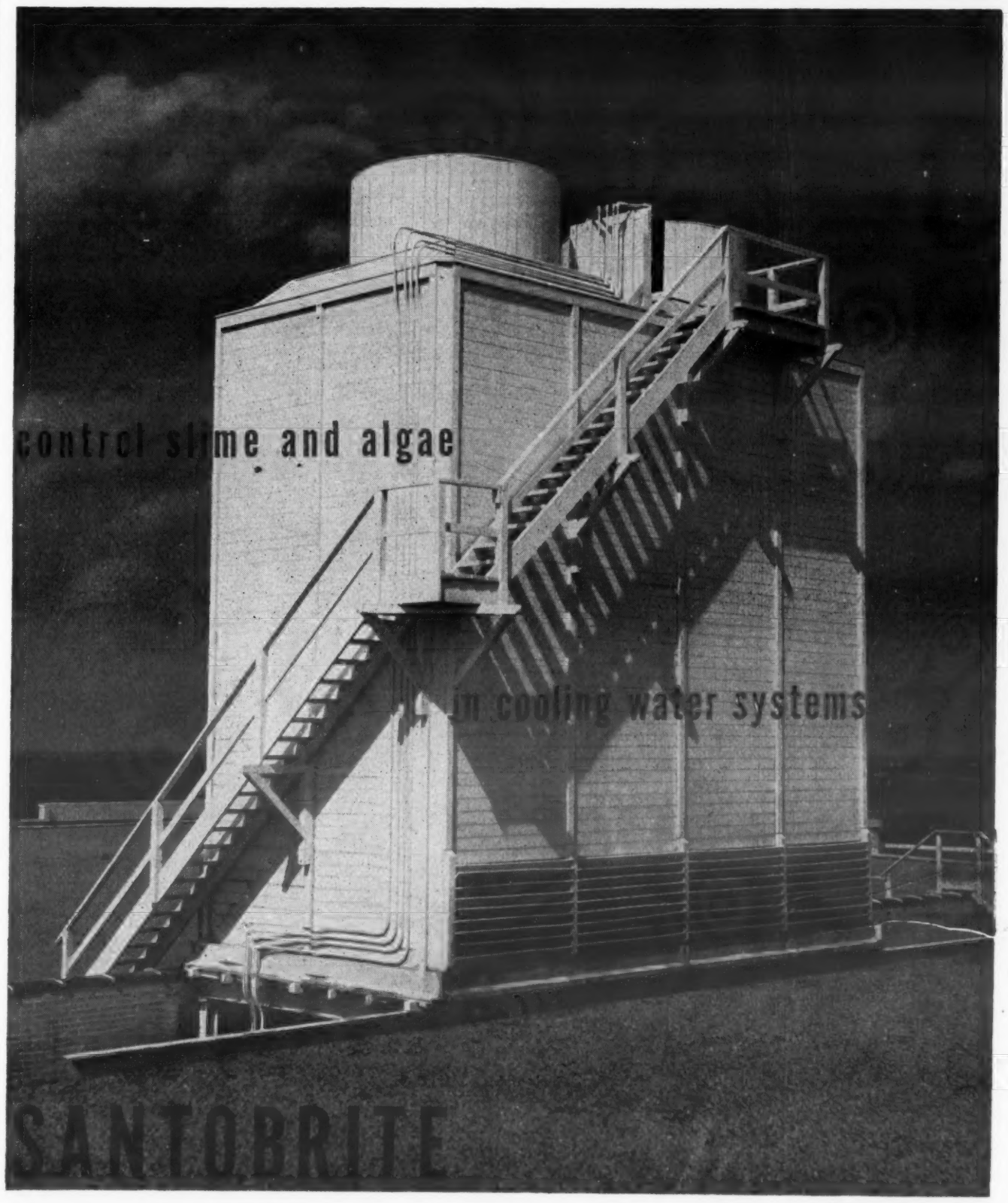

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Developments in Pre-Packaged, Frozen Foods Open 'Revolutionary' Market

Need for Refrigeration Equipment Slows Expansion, Says U.S. Expert

Editor's Note: This is the first of two articles in which the possible far-reaching effects of food freezing, pre-packaging of perishables, and air transport on farm produce marketing are discussed by F. L. Thomsen, head of the Bureau of Agricultural Economics' division of marketing and transportation research in the Department of Agriculture. His comments imply wide opportunities in the refrigeration industry.

WASHINGTON, D. C.—Technological changes now occurring in the marketing of farm products, such as food freezing, pre-packaging of perishables, and air transport, constitute developments as revolutionary as have ever marked the production and distribution of foods, believes F. L. Thomsen, who heads the division of marketing and transportation research in the U. S. Department of Agriculture's Bureau of Agricultural Economics.

"We receive a good many letters from veterans and others asking for information about the frozen-food business and indicating that they intend to get into it in the near future, although obviously many of these people have little knowledge of conditions in that business," said Mr. Thomsen.

"There also seems to have been some rather loose talk on the part of some agricultural advisors about the desirability of expanding frozen-food processing facilities in certain areas. If a good percentage of these expressed intentions were fulfilled we might easily run into a very unfavorable market situation for frozen foods in the next few years, when supplies of canned goods may continue large and wholesale and retail distribution facilities for frozen foods may not have had an opportunity to catch up with production.

"So, at the one extreme we have those who believe that frozen foods will be merely a flash in the pan, constituting only a negligible fraction of total consumption of agricultural perishables and limited chiefly to high-priced products for the fancy trade.

"At the other extreme are those who make enthusiastic predictions that frozen foods will take over practically the entire perishable field, largely replacing fresh and canned fruits and vegetables, and completely dominating meat distribution and even such items as milk, eggs, and bakery goods. Some in this group even hold that practically all food will be pre-cooked, frozen, and sold as complete meals to consumers who would merely warm up the product before using it.

"As usual, the most careful analyses point to a development somewhere between these extremes.

"Frozen fruits and vegetables now constitute only about 1.5% (farm-weight basis) of the total consumption of these products in fresh and processed form. In terms of percentage increases the expansion during the next few years no doubt will be enormous, but it is probable that a considerable period, say 10 years, will be required for frozen foods to take over any sizable proportion of the total trade in fruits and vegetables. But the trend will be strongly in this direction," he asserted.

"As compared with the fresh product, frozen fruits and vegetables have several definite advantages for the consumer. They are easier to buy, require no preparation for cooking, keep indefinitely in the freezer compartment of the refrigerator, eliminate waste, give uniform quality throughout the year and from store to store, and when distribution is fully developed will offer a wider variety from which to select.

Taste Rated Superior

"Many people consider the taste of frozen vegetables superior to that of the fresh product after it has been hauled and mauled through the usual marketing channels, and biochemists report that the vitamin content is superior except for recently picked fresh produce. With most frozen fruits the relative flavor and texture is debatable, with most people apparently preferring the fresh product," Mr. Thomsen declared.

"Compared with canned fruits and vegetables the frozen products seem to have an advantage in practically every category except ease in preparation, where they are on equal footing, and relative cost or price. And there is reason to expect that the cost advantage enjoyed by canned foods today will gradually diminish as the volume of frozen foods picks up all the way down the line and chain stores and super-markets begin to feature these products instead of treating them like the proverbial step-child.

"Of the several divisions of food processing, potentialities for expansion seem greatest for frozen foods. However, there has been a tendency to overlook many important factors which will affect the speed with which these growth possibilities may be achieved. A longer wait than has been generally anticipated appears in prospect before the full effects of the industry's broadened postwar program will reach civilian markets.

Cost May Decline

"There are indications that products not featured in current lines of frozen foods may contribute most materially to development of the frozen food industry," believes Mr. Thomsen. "The greatest stimulus to civilian consumption, aside from the availability of new frozen products, may come from a gradual lowering of costs and margins, which now are relatively high and tend to put frozen foods in the luxury class.

"Need for special facilities and equipment for distribution and storage in the home is one of the factors tending to slow the expansion of frozen foods. These facilities include properly located cold storage warehouses and refrigerated railroad cars and trucks adapted to low temperatures.

"Merchandising cabinets, designed for self-service selling and a wide variety of frozen products, must be made available for many types of retail outlets. For storage in the home, either special freezer cabinets or household refrigerators with much larger frozen storage capacity are needed.

"It now appears that one of the principal bottlenecks restraining the development of frozen foods will be the relative slowness with which

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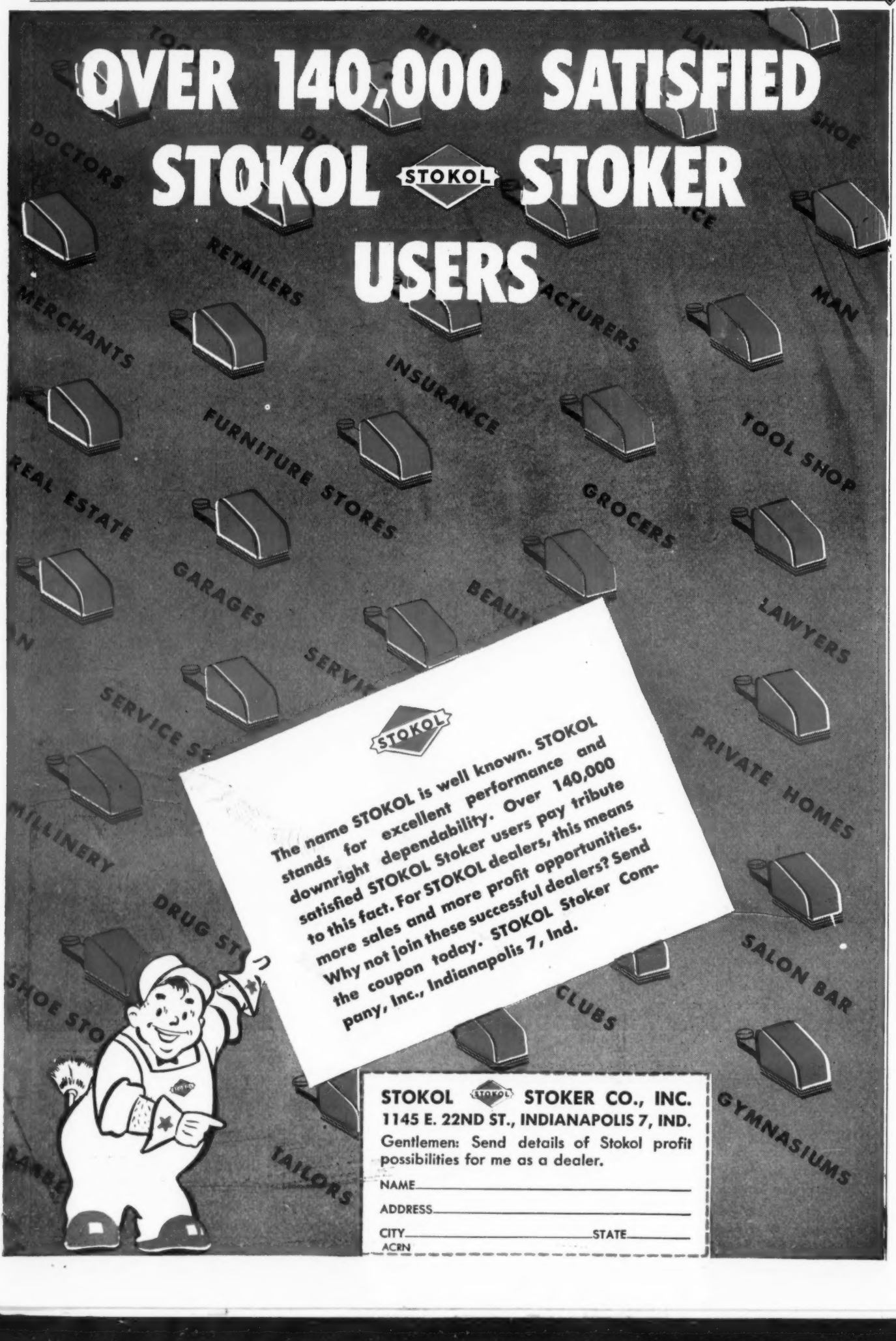

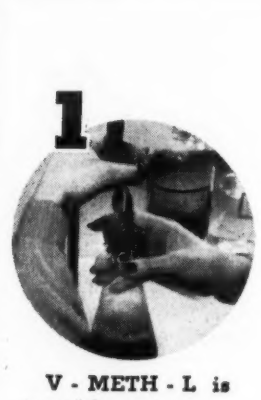
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F. L. Thomsen Cites Currrent Innovations In Food Packaging

(Continued from preceding page)

homes can be equipped with necessary low-temperature storage space," said Mr. Thomsen.

"Consumer acceptance of frozen foods was hastened during the war by the elimination from the ration list of frozen fruits and vegetables. Many consumers, who otherwise would have hesitated to try a new product, became acquainted with and found they liked frozen foods.

"This probably more than offset the effects of withdrawal from the civilian market of frozen items taken exclusively by the government and wartime limitations on the availability of freezing and distribution equipment.

Prewar Major Items

"Before the war fruits and vegetables constituted the bulk of frozen foods, with a considerable volume of frozen fish and some eviscerated frozen poultry and meat also being produced. The latter items no doubt will gradually increase in absolute volume and relative importance during the next several years, until eventually they become a major part of the frozen-food trade.

"It seems probable that pre-cut, pre-packaged fresh meats will develop faster at first, with the transition to freezing as consumers and retailers become accustomed to frozen meats through the handling and consumption of various specialty items such as frozen hamburger.

"Results of research and consumer tests now in progress may warrant widespread production of frozen precooked meats and other foods. Further advances may be looked for in the assembly of precooked items into complete meals.

"Many innovations have been proposed in merchandising frozen foods. Some of these, such as coin-operated vending machines in factories, office buildings, and apartment houses, have possibilities. However, many technical problems remain to be solved. Locker plants and home freezers will be used much more after the war, but the volume frozen in these facilities will be a minor part of the total consumption of frozen foods.

Normal Development Predicted

"The outlook is that frozen foods will experience their real development as part of the regular commercial trade in food. Most established types of marketing agencies, such as super-markets and meat packers, will retain most of the competitive advantages and disadvantages which they now experience in the fresh and processed food trades.

"The fresh fruit and vegetable and canning industries will not take this new competition lying down. Already the trend of thinking in fresh fruit and vegetable circles is definitely toward pre-packaging, which would give to these products almost the same consumer advantages in buying, handling, and preparation which frozen foods now have. No doubt you have all heard of the pioneer work done in this field at Columbus, Ohio, by the Ohio State University and a large chain-store.

"The Bureau of Agricultural Economics is now cooperating with a large Eastern chain-store organization in another experimental operation of this kind, planned to carry further our knowledge of relative costs, labor requirements, consumer acceptance, waste and spoilage, and effect on other retail food merchandising practices and results," stated Mr. Thomsen.

"Although the facts available are still inconclusive there is reason to believe that at least the greater part of the costs of preparation, packaging, and refrigeration will be offset by savings in waste and in labor in the retail store, as well as in transportation if the packaging is done at point of origin.

"If allowance is made for the reduction in waste to the consumer as compared with the waste incurred in connection with bulk produce bought at retail, the net cost to the consumer may be less, and in any event is not likely to be sufficiently above that of the product sold in bulk to make any significant difference. There is ample evidence that consumers react very favorably to the pre-packaged products.

Bulky Products Difficult

"In their enthusiasm for pre-packaging, however, as for frozen foods, some folks seem to forget that a major proportion of all fruits and vegetables consists of the large, bulky, less perishable products which are not particularly well adapted to such methods of merchandising. It is true that potatoes may be put up in 10-pound sacks having a transparent strip or window for the consumer to observe size and quality, and oranges may be wrapped in pliofilm or dipped in wax to prevent evaporation and improve appearance, but these and similar refinements can hardly be put in the same class as pre-packaging such products as peas, beans, spinach, cauliflower, and broccoli.

"Other developments in marketing fresh fruits and vegetables also should help to improve quality, increase total consumption, and bolster the competitive position of fresh produce. Among these are increased speed in getting the product from producer to consumer, more care in handling all along the line, and better wholesale and retail merchandising methods. Air transport will permit the sale to consumers of vine- or tree-ripened products much better in quality than the green-picked, artificially ripened produce to which consumers now are limited throughout a large part of the year.

"We may also look forward to improved refrigerator cars traveling on faster schedules and the introduction of refrigeration all along the line in handling bulk as well as pre-packaged fruits and vegetables.

"Many of the innovations expected in marketing center around new developments in food packaging. The war did not interrupt the high level of progress which had been made in this field prior to 1940. Preparation of foods for military and lend-lease shipment promoted experiments to meet the extremes of war conditions.

"The domestic situation necessitated wide changes in civilian packaging. Interest in semi-automatic machine methods of packing was intensified. The dynamics of mass food retailing in the coming years favor wide use of these many new inventions and improvements in the forms and materials of food packaging.

"Pre-packaging of fresh fruits and vegetables seems to be an inevitable development. Activity here is only partially accounted for by the desire of dealers in fresh products to offset competition from the quick-freezing process. The combination of favorable factors includes the interest of self-service operators in eliminating completely the sale of bulk foods from their stores. Protection against weight loss from evaporation and against bruising and spoilage is promised by pre-packaging.

"Savings in transportation costs can be effected when the products are trimmed for packaging at an early stage in the marketing channel. The likelihood that pre-packaging will be common in air transport of fresh produce is another factor.

"The extension of pre-packaging to fresh meats is also indicated. Relaxation of rationing, and eventually of price controls, will give strong impetus to this method of marketing meats, particularly in self-service markets. Preliminary tests disclose important gains for some retailers. Large self-service stores are reported to have achieved greatly increased volume and a substantial reduction in the ratio of pay roll to sales, compared with other stores in which the meat department is on a service basis. Economies grow out of the substitution of girl wrappers for meat counter men.

"Many types of meats, such as the various kinds of sausages have long been pre-packaged. Wide adoption of the practice which will permit the shopper to select fresh meat from an open-front refrigerated case without the services of a salesman awaits the development of a "fool-proof" package and more information about consumer acceptance of various cuts of meat put up for this purpose.

All-Purpose Processing

"The possible introduction of pre-packaging fresh fruits and vegetables at the grower end of the marketing system plus the growth of frozen foods may result eventually in several-purpose fruit and vegetable processing plants which will be in a position to divert raw materials into fresh, frozen, or canned channels as dictated by shifting conditions of supply and demand. Such a system, of course, would be limited by difficulties in growing in one locality the varieties suitable for all uses, and in substituting varieties and qualities in different uses.

"But this arrangement has such distinct advantages from an economic standpoint that it would seem worthy of serious consideration by production specialists and seed growers who might develop multi-purpose varieties that would be better adapted to such a system of utilization.

(To Be Continued)

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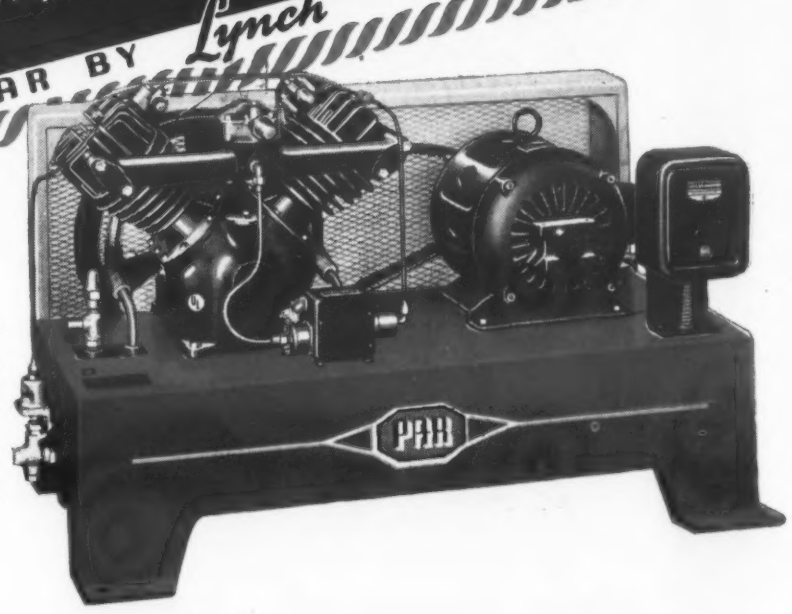

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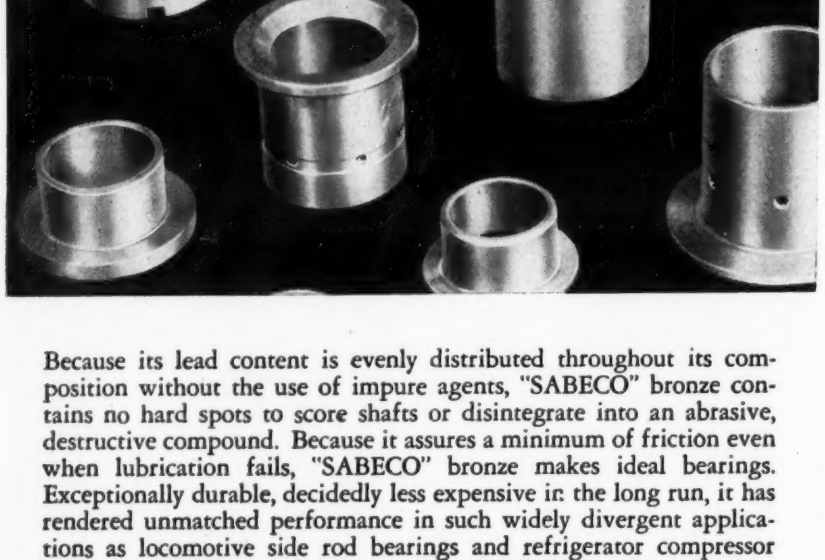

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World Trade News:

Exporters Confer at Conference in Chicago

International Cooperation Essential If U.S. Is to Expand Foreign Trade

By John Sweet

CHICAGO—An expanding foreign trade is an absolute essential in our economic life if we are to progress and prosper in our competitive free enterprise system.

But it cannot be expanded without international economic cooperation.

That was the message nine speakers, headed by Secretary of Commerce Henry A. Wallace, had for the more than 1,000 participants in the recent Chicago World Trade Conference.

The conference was held in the Edgewater Beach hotel under sponsorship of the Chicago Association of Commerce and the Export Managers Club of Chicago. At the end of the all-day meeting, delegates left the Edgewater's ballroom to mull over these suggestions on what the U. S. must do to promote a maximum of foreign commerce:

Role for U. S.

It must accept the role of the only big creditor nation in the world by financing other countries' trade deficits and by helping them restore their economies.

It must cooperate in breaking down trade barriers and economic blocs.

It must approve the proposed $3,750,000,000 loan to Great Britain.

It must enlarge its imports and stabilize them at high levels.

This international economic policy aimed at the "maintenance of a world-wide system of reciprocity in foreign trade" is in "our own enlightened self-interest," speakers emphasized. The alternative, they warned, is economic warfare and the prospect of a world depression and another world war.

Speakers at the morning session included John Abbink, chairman of the National Foreign Trade Council; A. J. Kelley, chairman of the export-import committee of the National Industrial Traffic League; and James F. Stiles, Jr., president of the Illinois State Chamber of Commerce.

Col. William McChesney Martin, chairman of the board of the Export-Import Bank, addressed the luncheon session.

The afternoon session heard Gen. Harold R. Harris, vice president and general manager of American Overseas Airlines, Inc.; Dr. Arthur R. Upgren, professor of economics at the University of Minnesota; and Dr. E. M. Bernstein, assistant director of the division of monetary research of the Treasury Department.

Comdr. William M. McGovern, professor of political science at Northwestern university, and Mr. Wallace spoke at the dinner session.

"If the United States were to meet the tremendous world import requirements for our products, our exports would average $14 billion a year for the next few years," Mr. Wallace declared. "Obviously, of course, our exports cannot reach this level—or anywhere near this level—so long as supplies are short, or so long as foreign nations lack the financing necessary for purchases of our goods."

Financial Resources

Proposing that the U. S. will have to furnish this financing, Mr. Wallace said the projected deficit of countries importing more than they export would total around $50 billion for the three-year period. These countries, he stated, would include most of the rest of the world.

"Resources are available to these countries for financing perhaps a third of this trade deficit," he pointed out. "Another $16 billion would be accounted for through the operations of the international agencies—the relief and rehabilitation work of UNRRA, and the lending and monetary stabilization operations under the Bretton Woods agreement. This leaves a three-year total of perhaps $15 to $20 billion of world trade that may require financing if basic needs are to be met."

Allowing that another $3 billion could be accounted for by such countries as Canada, Sweden, and Switzerland, Mr. Wallace asked: "Where shall we find this $15 billion, more or less, in foreign trade financing?"

"You know, as well as I do, that most of it will have to be found right here in the United States," he asserted. "This is true not only because the other countries just do not have the available funds. It is also true because the great bulk of the goods—both capital and consumer goods—which the deficit countries will buy will come from the United States."

In emphasizing the necessity of congressional approval of the British loan, Mr. Wallace described the loan as "an inseparable part of the basis for economic cooperation throughout the entire world." Britain, he said, is unable to pay for the things she will need in the next few years due to the widespread destruction of productive capacity and shipping, the sale of a large part of her foreign investments, and sizeable foreign and domestic war debts.

"Without this loan, Britain would be forced to obtain her essential imports from those countries willing and able to supply food and raw materials in return for pounds sterling, to be spent in Britain at a later date . . . ," he claimed. He declared that Britain "would be forced to maintain the severest kind of exchange controls, tariff preferences, quota restrictions, and other techniques of economic warfare for an indeterminate period."

British Trade Prospects

Mr. Wallace said the U. S. would be unable to sell goods throughout the British Empire and that both countries would have to resort to bi-lateral trade agreements. The result, he predicted, "would be economic warfare that would destroy the hopes of your government for the maintenance of a world-wide system of reciprocity in foreign trade.

"I have no hesitancy in saying that the peace would not long survive if the world is to be divided into three restrictive economic blocs—the dollar bloc, the sterling bloc, and the Russian bloc," he said.

Dr. Bernstein outlined for the delegates the government's international economic policy which he said is designed to "restore world trade, to free it from the restrictions that isolate countries, and from the discriminations that divide them into conflicting economic blocs."

The only way to deal with international economic problems, he suggested, is through international economic cooperation. "We have proposed that the United Nations provide the means for such cooperation through the establishment of the International Bank, the International Fund, and the International Trade Organization," he explained.

"World trade cannot be restored until the countries in Europe and in

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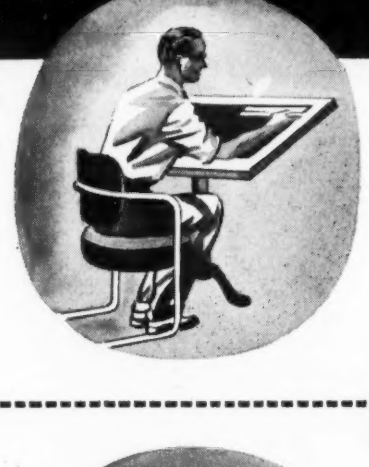

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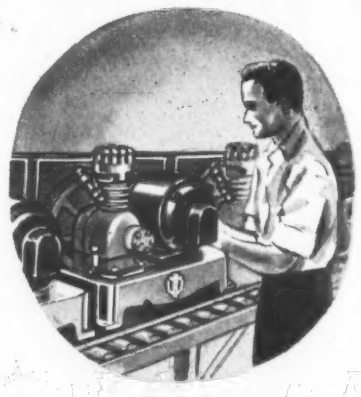

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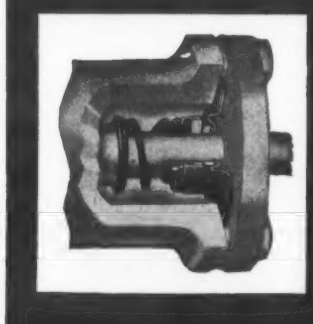

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U.S. Must Remain Creditor Nation To Keep World Markets, Say Experts

(Concluded from preceding page)

the Far East that have been devastated by the war are again able to produce, to buy, and to sell. These countries will need help to begin producing again."

It was explained that the International Bank will facilitate loans for productive projects of reconstruction and development. Fair currency practices will be agreed upon through the International Monetary Fund, Dr. Bernstein stated. He said the fund's resources of about $7½ billions "can be used by member countries to meet their needs for foreign exchange to keep their current trade going."

What About England?

Although recognizing that England was forced to adopt war-time currency and trade restrictions, Dr. Bernstein said these controls are now harmful to world trade and prosperity. "It is of the utmost importance to this country to see that the measures England takes to meet her essential import needs are not of a character that will restrict world trade and discriminate against American exports," he stressed.

Dr. Bernstein explained that under the Financial Agreement, England will do the following:

"1. Within a year England agrees to make all sterling arising from current trade convertible. If Mexico and Egypt export to England they will be able to use the money they get in any country. That means they could convert the sterling into dollars and buy radios or refrigerators in the United States.

"2. Within a year Britain will dissolve the dollar pool. The money that the sterling area countries get for their exports to the United States could be spent here without getting an allocation from England. . . .

"3. Exports of goods and services from the United States to England will be paid for in dollars, or if paid in pounds, the money can be converted into dollars by American exporters. . . .

"4. The blocked sterling balances will be settled by England and the countries concerned. . . . That means that England will not force these countries holding more than $13 billion in sterling to buy British instead of American goods.

"5. England's import controls will be administered in a manner which does not discriminate against American products. . . .

"6. England will support the American proposal for an International Trade Organization. . . ."

Fewer Restrictions Asked

Calling for "an end to talk of indefinite regimentation," Mr. Abbink proposed that the strain on the productive capacity of the U. S. can be greatly relieved and much more quickly overcome "if existing bureaucratic restrictions are reduced immediately to a sensible minimum. Business is far better able than government to allocate products. . . ."

But he cautioned that "if private enterprise is to undertake the equitable distribution of commodities with a minimum of government interference . . . it will be imperative that a definite set-aside be agreed upon for overseas shipment.

"There is no other source than the United States from which many of the things can be obtained that are required for the rehabilitation of areas destroyed during the war. . . . We face a period when we shall have to share part of what we want ourselves."

After describing how Russia, long after V-J Day, threatened to use diplomatic pressure, if necessary, to obtain a large order for steel, Mr. Abbink warned that the manufacturer who does not decide now to allocate a definite percentage of his output for overseas sale "risks continued and expanding political interference in our economy.

"If we want to minimize government control we have got to regulate ourselves much more effectively than we have in the past," he suggested. "The export executive is remiss in his responsibility who does not see to it that the principle is established in his own organization."

Some manufacturers, Mr. Abbink said, have decided to make available for export from 8 to 15% of their production. "The newcomer to export may well decide to budget on the higher figure, because there is every indication that overseas demands during the next few years will be far beyond anything we have heretofore experienced," he observed.

He said that the peace-time production index in the U. S. "will have to be established indefinitely at levels it reached previously only under inexorable war conditions, if we are to assimilate our debt burden and prevent widespread unemployment after the present accumulation of pent-up orders has been satisfied. Reasonable estimates indicate that to accomplish these objectives the United States must henceforth maintain export totals more than twice as high as were reached in any prewar year, some say $10 billions annually for an average."

Domestic Activity Vital

With exports sustained by credits granted, the U. S. in the five years ahead must find avenues whereby imports will be enlarged and stabilized at high levels, it was stated by Dr. Upgren.

Most important of the factors conducive to a stable import flow, he said, is maintenance of a "high level of domestic activity." This, he claimed, "is even more important than attempting directly to enlarge imports by lowering tariff rates.

"I think, that together with the raw material producing countries of the world we should carefully plan the volume of imports that is appropriate and fitting to the levels of domestic industrial activity we now propose to maintain at home," he advised. "Then, we should be prepared over a period of years . . . to enter into long-term raw material purchase agreements whereby we will plan to accept such stabilized amounts because we know large amounts are needed to sustain our own industrial activity levels."

It was the opinion of Mr. Stiles that the cultivation of export trade on an equitable basis is a "sound long range program for the insurance of our free enterprise. The establishment of foreign demand for our products on the basis of their value is the best builder of confidence and goodwill," he said.

"Even though American firms can sell all of their output in the United States markets today they should now allocate a definite portion of their efforts and merchandise to export channels so that when more goods are available in the United States this established trade will lend a sound foundation for furthering their export business," he advised.

Mr. Stiles suggested that "our packages, our approach, the use of our products should conform with the uses and customs of the country in which we want to sell."

He offered this five-point program for companies interested in exporting:

"1. Provide in this year's financial budget the largest amount for export development you can consistently make. If carefully expended it will be a most satisfactory investment.

"2. Understand thoroughly every potential foreign market and determine the possibilities for your merchandise as well as how it must be marketed before shipping merchandise into the country.

"3. Cooperate with our government in reciprocal trade agreements which will help distribute the dollar exchange as far as possible.

"4. Establish a reputation for quality of merchandise and integrity of purpose in all dealings.

"5. Explore, don't exploit, your foreign markets."

Discussing the "plans and hopes" of the Export-Import Bank, Col. Martin described how the expanded authority of the bank would be used "to fill the emergency reconstruction needs of liberated areas until the World Bank could come into operation.

"Failure to meet the requirements of these unfortunate areas . . . would risk loss to the United States of foreign trade which is fundamental to our progress and prosperity," Col. Martin said. Private capital, he stated, is not yet organized to handle their needs.

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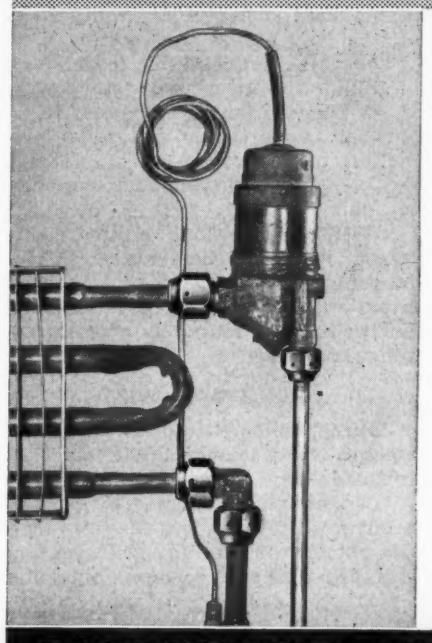

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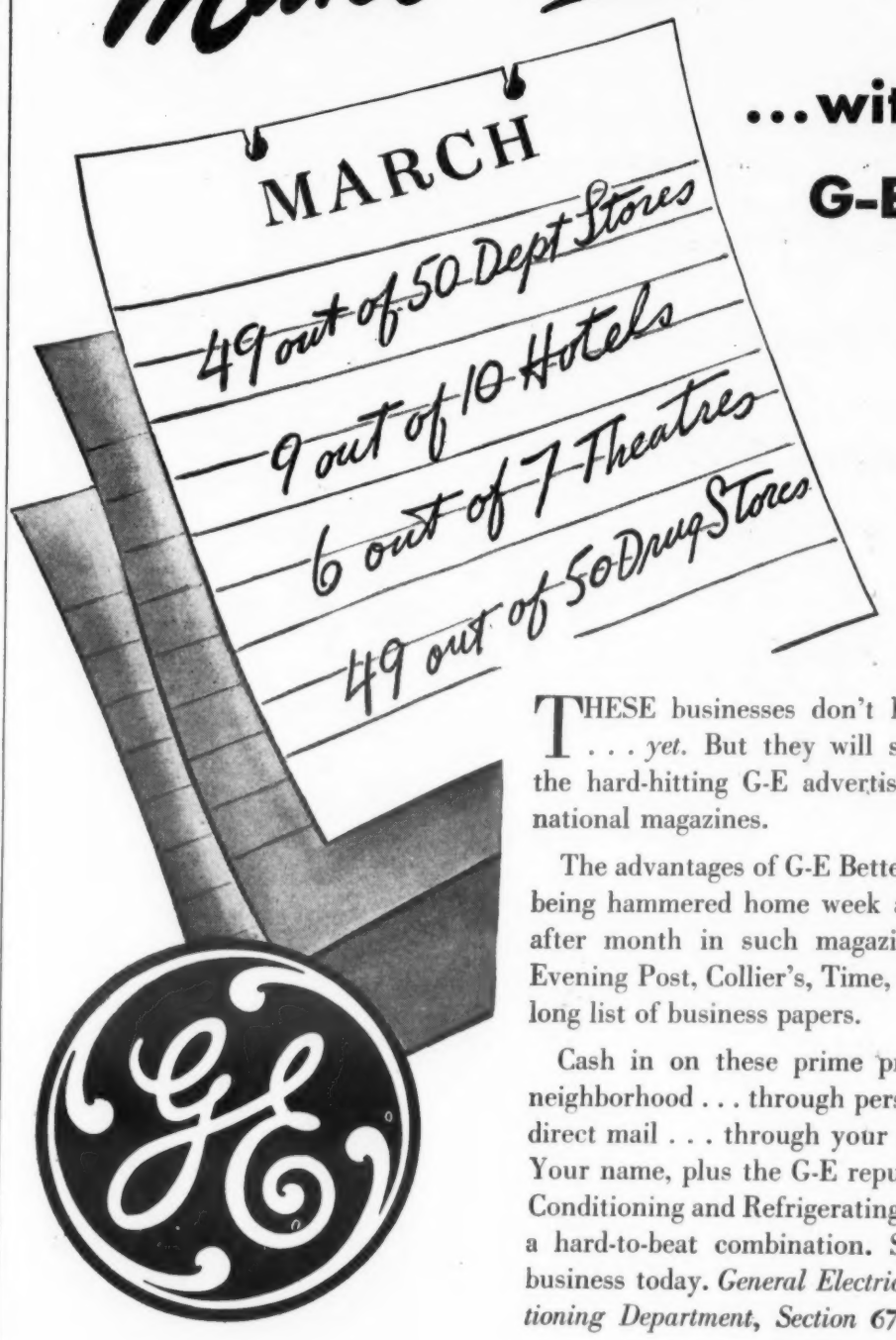

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Deepfreeze Executives Outline Future Distribution and Service Programs

CHICAGO — With regional offices and permanent displays now established in four major cities, departmental heads of Deepfreeze Division of Motor Products Corp. recently completed a swing through a series of regional distributors' conferences all the way across the country.

The three men taking major part in telling the Deepfreeze story were F. F. Duggan, sales manager; R. V. Newbell, advertising and sales promotion manager; and S. J. Seibert, the company's service and engineering chief.

"With organizations of kindred interest backing the sale of home freezers," Mr. Duggan told the distributors, "the market for this relatively new product is almost unbelievably wide.

UTILITIES GAIN

"For public utilities, the home freezer represents an *additional* load, consistent the year around.

"Locker plant operators' greatest profit is in the services they render—slaughtering, butchering, wrapping and packaging, freezing, and sometimes even selling processed foods.

"To them, the home freezer is not a competitive item, for home freezer owners constitute a greater market for whom the plant operators can process more food or sell processed food to. A survey taken two years ago shows that 80% of the locker plant operators would like to be retailers for home freezers.

"And standard retailer outlets such as department stores, hardware stores, and independent appliance dealers are bidding competitively for contracts."

The surprising element in the picture, Mr. Duggan told his audience, is the amazingly rapid growth of the home freezer market. The history of the major appliance business shows that in the past it has always taken about 20 years to create public recognition and acceptance of a new item, no matter how sound its principles.

It is generally agreed that a major appliance has arrived when it passes the 1 million mark, he said. It took more than 20 years for the first million electric ranges to be sold, and automobiles and refrigerators follow a similar sales pattern.

WIDESPREAD DEMAND

The home freezer has gone ahead much faster than any of these, he pointed out—not in actual sales, but in the widespread demand for freezers as soon as they shall be available.

A recent *McCall's Magazine* survey indicated that over 23% of all families living in wired homes want home freezers, he illustrated. An electric power company's door-to-door checkup showed 23-27%. A survey by the Curtis Publishing Co. estimated the market to be 750,000 units a year.

A consensus of them all marks a conservative annual figure of half a million units, he revealed.

Extension departments of state universities have instituted research in techniques in food freezing, Mr. Duggan pointed out—leading to a marked expansion in the number of locker plants.

Preparing for this market, Deepfreeze has set up four regions covering the United States, he stated, with headquarters in New York City, Atlanta, Chicago (in the Merchandise Mart), and San Francisco. Each will have a regional manager.

District divisions within each region will bring facts, figures, and information to distributors through a district manager, he concluded. A home economics department will carry on research in frozen foods and their uses, and demonstrate them to the public.

TRAINING IMPORTANT

"A new service and a new product need a real training program," said Mr. Newbell in outlining the company's plans.

Already in preparation are a sound slide training film, a sales training manual, and a correspondence course for salesmen that will give the sales story in short lessons with questions and answers.

Material for the dealer to use, in his selling presentation, can be drawn completely from the national advertising Deepfreeze maintains, he told the distributors.

In local advertising, the manufacturer and the distributor, in partnership, will match the dealer's dollar in whatever medium the dealer expresses his preference, he stated. The plan as set up emphasizes the importance of three media:

1. Local newspaper advertising is most effective for dealers in an urban community where there is strong reader coverage, Mr. Newbell outlined. The advertisements the company has prepared leave ample space at the bottom for the dealer's name and address. Mats are supplied free, with the company paying half the dealer's space expenditure.

RURAL TECHNIQUE

2. Billboard posters are best for the dealer in a rural or small community without a daily paper, he advised. They build his reputation as a merchant, as the representative of a nationally known concern. No charge is made to the dealer for the 24-sheet color posters, and again the company pays half his billboard rental.

3. Local radio is effective in getting people into a store, Mr. Newbell stated. The company's prepared 25 and 50-word spot announcements are forwarded to the dealer upon request, and half the cost of his radio time is assumed.

In addition to these are neon signs, decalcomanias, window trim, and complete advertising kits, all playing up the same consistent selling points found most effective, year in and year out.

ADVERTISING KIT

The advertising kit is the first complete package of material ever set up for a home freezer, Mr. Newbell claimed. Containing window trim, consumer broadsides, envelope stuffers, specification sheets, counter cards, window decals and "How to Freeze" booklets, the complete package is offered at $19.95, with replacements always ready on any items the dealer needs.

These materials are used most effectively as an organized plan for regular, timed presentation, he emphasized; otherwise their maximum selling qualities are wasted.

"Peak up the plan in peak selling seasons," Mr. Newbell concluded, "but keep it going regularly, at the largest volume consistent with each dealer's allowable expenditure."

"It's important to know what goes on under the hood," said Mr. Seibert in introducing his discussion of exactly how the Deepfreeze unit operates.

All mechanical refrigerators are made up of three essential parts, he outlined: an evaporator, or chilling unit; a condensing unit; and a cabinet, or insulated enclosure.

COOLING SURFACE DESIGN

In the household refrigerator the evaporator is a small compartment where you keep your ice cubes, he illustrated. In the Deepfreeze unit, the evaporator is the entire cylinder in which the food is stored. It is a chamber 18 in. in diameter and 30 in. deep, a design that allows no stored food to be more than 9 in. from the freezing surface, he pointed out, and one that makes it impossible for cold air to spill out.

(Concluded on next page)

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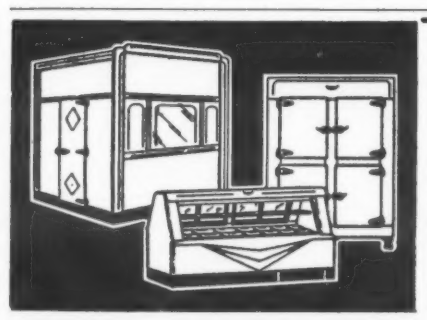

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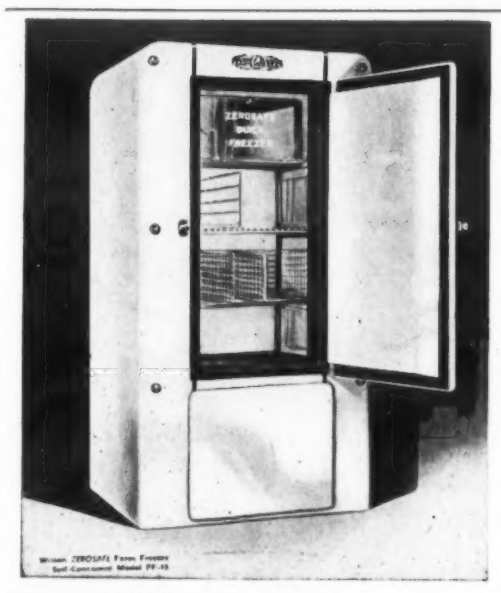

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Distributor Will be Responsible for All Parts Suppliers Under Deepfreeze Plan

(Concluded from preceding page)

The cylinders themselves are made of 20 gauge steel, painted white both inside and out, he stated, with 70 ft. of ⅜ in. copper tubing coiled completely around each one. A special metallic plastic filler increases the tubing's contact with the freezing wall.

The average household refrigerator uses a 1/10 or ⅛ hp. motor, he illustrated. The Deepfreeze unit's requirement is ⅓ hp.

Describing the operation of the system, Mr. Seibert used charts to show how the "Freon-12" refrigerant enters the copper coils at an average gauge pressure of 4½ lbs. At this pressure the refrigerant will boil at -10° F., he reported, and surrounding temperatures anywhere above -10° will cause it to evaporate.

RANGE OF SYSTEM PRESSURES

The compressor sucks the gas from the top of the copper tubing spiral into its own cylinder heads, which compress it to 92 lbs. and pass it on into the condenser, where its accumulated heat is lost to the cooler air moving across the condenser.

During compression the refrigerant's boiling point has been raised from -10° to 85° F., Mr. Seibert pointed out—higher than that of the surrounding air. So that, in addition to losing the heat it took from the copper coils, the high pressure gas has returned to a liquid.

Still under 92 lbs. pressure, however, the refrigerant passes through the condenser into a small storage tank called the receiver, through a dryer, and is ready to reenter the copper coils. At the threshold are thermostatic expansion valves that reduce its pressure from 92 lbs. to approximately 4½ lbs.

CYCLE RENEWS

Its boiling point once more is -10°, and so the cycle begins again.

The coils would get colder and colder, to the limit of the compressor's capacity, if it were not for the automatic pressure control, said Mr. Seibert. Actuated by the pressure on the suction side of the compressor, this control cuts out the motor when the temperature drops to a set point below 0° F., and kicks it on when the temperature rises to 0° F. again.

To install a Deepfreeze unit in a home, Mr. Seibert continued, requires only the opening of three service valves, two of them being on the compressor and a third on the receiver. All are accessible from the front of the machine, he illustrated, with access gained by removing a single screw on the top cover of the louvered panels. The cover then lifts off and the entire front panel can be removed.

The service program for the Division in outline will follow those general to the major household appliance field, he said.

The distributor will be responsible for the service program in his own territory, and will be required under his franchise to provide adequate servicing arrangements and an adequate supply of service parts. It will be up to him to adapt the program to conditions in his territory.

NO PARTS TO DEALER

The factory, from its end, will supply no service parts directly to dealers or their customers, referring all orders and the handling of any returned materials to the distributor, he added.

The distributor thus will determine his own needs as to parts needs, and as to his policies in establishing servicing and non-servicing dealerships within his territory.

In a metropolitan center, for instance, the distributor may operate through a centralized delivery and service arrangement, with the dealers in that area operating as non-servicing dealers. The distributor's responsibility will then include the securing and training of the personnel to maintain it.

DISTRIBUTOR RESPONSIBLE

Those dealers operating their own servicing departments, on the other hand, would take care of this themselves, Mr. Seibert acknowledged, but the responsibility of seeing that it is done still rests with the distributor.

Field service engineers will help the distributor organization in setting up and operating its service program, he added, helping in the training both on the distributors' and the dealers' ends. Direct field contact has been found most helpful for distributors any considerable distance away from the factory he said.

Every Deepfreeze home freezer will carry a warranty to the original purchaser that all parts of his unit are free from defects in material and workmanship, effective under normal use and service for a period of one year, Mr. Seibert disclosed.

The warranty will apply to all parts except belts and finishes. Under its terms, the manufacturer must repair or furnish replacement parts whenever the regular dealer or distributor examines the unit and judges a part defective. The warranty will *not* cover any part used as a replacement, under the warranty, for a period longer than the term of the warranty on the original unit, he said.

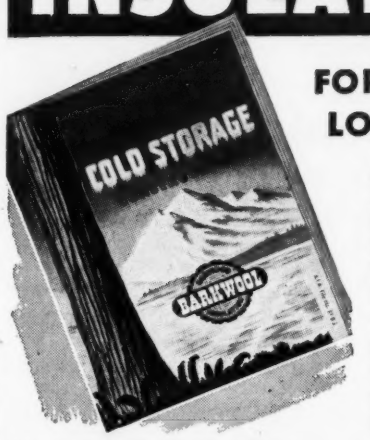
STEEL TUBING REPLACEMENT

One field problem that will recur developed during that time when wartime restrictions required the company to install steel tubing instead of copper, Mr. Seibert illustrated. In most cases this steel tubing will have to be replaced, and the necessary procedure has been set up in a No. 15 Service Bulletin.

The operation has been worked out as to equipment and time required, and copper tubing replacement harnesses for both the single and double cylinder units have been fabricated, he said.

They will be sold to dealers for $2 and $3 respectively, and with three hours necessary for changing the single and six hours for the double, a flat labor charge of $10.50 and $18 has been set.

INSULATING FACTS



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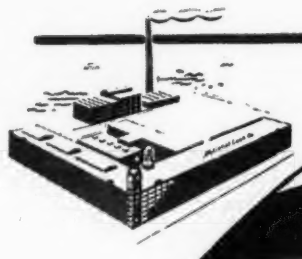

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ROCKFORD, ILLINOIS

Refrigeration Problems
And Their Solution

By P. B. Reed

For Service and Installation Engineers

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

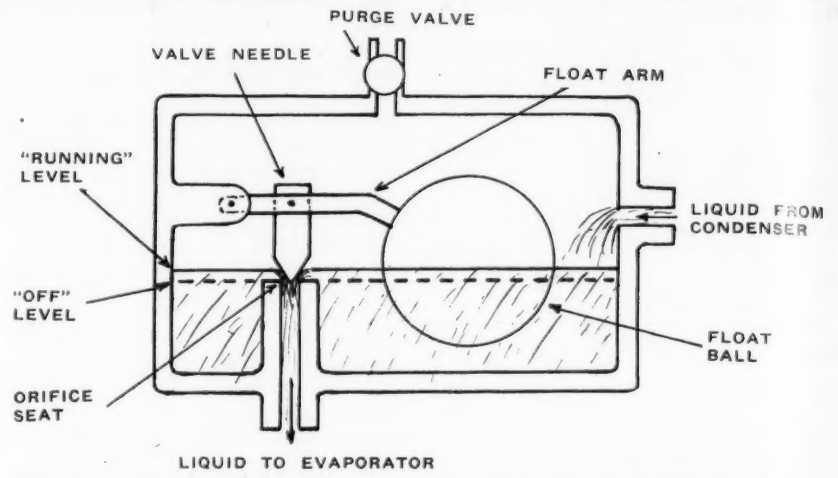
The High-Side Float Valve (Part 3)

From the above it will be seen that, like the capillary tube, the high-side float valve will feed liquid refrigerant into the evaporator as long as it is available from the condenser, but unlike the capillary tube, the high-side float does close off as soon as the supply of liquid refrigerant is exhausted.

Again, like the capillary tube, the high-side float valve requires a balanced charge, for if there should be very much excess refrigerant in the condenser when the condensing unit stops it would be passed on to the evaporator, from which it would "slug" back to the compressor at the start of the next running cycle of the condensing unit.

ACCUMULATOR DESIRABLE

Moreover, it is advisable to use an accumulator at the outlet of an evaporator fed by a high-side float valve just as in the case of the capillary tube fed evaporator and for the same reason, namely, to equalize the frostback during different portions of the running cycle.



This drawing illustrates the manner in which the high-side float valve operates. Dotted lines show how refrigerant level in the float chamber serves to regulate the flow of the refrigerant into the evaporator.

If the high-side float assembly is placed in a warm location the pressure of the vapor in the float chamber will be greater than that in the condenser, so the refrigerant will condense out of the float chamber and into the condenser.

At the start of the next running cycle the float will not open at once, for enough liquid must be condensed in the condenser and fed into the float chamber to fill the latter up to its normal level.

GAS-BOUND FLOAT

It is very necessary that *all* air or non-condensible gases of any kind be removed from a high-side float system, otherwise the air will gather in the float chamber and its pressure will be added to the vapor pressure in the chamber and will keep liquid refrigerant from entering the chamber, and as a result the float will not "open," that is, liquid refrigerant will not flow from the condenser into the evaporator.

This condition is known as a "gas bound" float. It can be temporarily corrected through purging some of the air by means of a purge valve. It is likely to occur again for it is extremely difficult to purge all of the air, at least in one purging operation.

PRESSURE OR TEMPERATURE CONTROL

Since the refrigerant pressure in the evaporator lowers as the condensing unit runs and as the evaporator temperature is lowered, the operation of the condensing unit may be controlled by either a low-pressure control or by a temperature control.

NOT FOR MULTIPLE SYSTEMS

A high-side float valve passes liquid refrigerant on to the evaporator as fast as it is supplied to it. They cannot be operated in parallel, that is, they cannot be multipled, for the float-evaporator combination that had the lowest pressure drop (the least flow resistance) would take all the liquid refrigerant and the higher resistance float-evaporator combination would get little or none.

If it is necessary to use two evaporators on one condensing unit and it is necessary, or for some reason desirable, to use high-side float liquid feed, the two evaporators should be connected in series (one after the other) with the high-side float feeding into the first evaporator, through it and through the second evaporator and enough refrigerant put into the system or that both evaporators are fully active.

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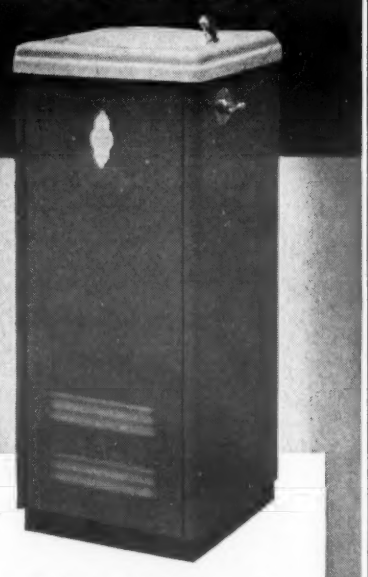

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Buffalo Forge Reports $1,010,568 Net Profit

BUFFALO—The Buffalo Forge Co. and subsidiaries reported net profit for the year ended Nov. 30 of $1,010,568 compared with $698,669 in the 12 months ended Nov. 30, 1944. Net sales for the latest fiscal year amounted to $25,026,255 compared with $28,294,401 in the preceding year.

"The increase in net income for the year ended Nov. 30, 1945, as compared with that for the year ended Nov. 30, 1944, is attributable principally to the elimination of the nonrecurring charge for New York State franchise taxes," Chairman Henry W. Wendt and President Edgar F. Wendt said in the annual report.

"During the war year 1945," the report said, "manufacture and shipment of ventilating fans and pumps produced for the U. S. and Canadian navies continued without other than minor cutbacks until shortly after V-J Day and today the company is continuing to make shipments for use of the U. S. Navy on the basis of reduced schedules.

"On V-J Day three factories (Buffalo Forge Co., Buffalo; Buffalo Pumps, Inc., North Tonawanda, N. Y.; and Canadian Blower & Forge Co., Ltd., Kitchener, Ont.) had considerable backlogs of commercial orders and, as soon as the necessary reconversion steps could be accomplished, production under these orders was commenced.

"Since then, orders for the various products of the company, particularly those covering air conditioning apparatus, have been excellent."

Commercial Dealers Form Twin Cities Group

MINNEAPOLIS — Under the auspices of the Commercial Refrigerator Manufacturers Association, the formal organization of the Association of Commercial Refrigeration Dealers of the Twin Cities has been announced here.

Directors of the new organization are: George B. Herman, Allied Store Equipment Co.; George N. Ornes, McCray Refrigerator Co.; W. F. Hauber, Kool-Aire Refrigeration Co.; Don Stevens, Twin City Refrigeration Sales Co.; and H. C. Wessin, C. V. Hill & Co.

Mr. Herman has been appointed president, Mr. Wessin vice president, and Mr. Stevens as secretary-treasurer.

Regular monthly meetings of the group have been scheduled for the future.

Miami Commercial Men Name Association Officers

MIAMI, Fla. — J. R. Turpin, J. Frank Vann, and Norton R. Granger were elected president, vice president, and secretary-treasurer, respectively, of the newly organized Commercial Refrigeration Distributors Association here.

Other members who are taking an active part in drawing up by-laws and planning future activities of the group are M. B. Rich, J. K. Keen, and H. H. Blair. These men represent national commercial refrigerator lines in the greater Miami area.

Alter Co. Announces Postwar Appointments

CHICAGO — Completing its postwar reorganization, the Harry Alter Co., refrigeration parts wholesaler and major appliance distributor here, announces several new appointments.

In the refrigeration parts distributing division Irving Alter, secretary and treasurer, is serving as general manager. Leo Alter, vice president, is head of Eastern operations for the firm. A purchasing agent prior to the war, Joseph R. Novotny returns as advertising manager after three years in the Navy.

Five veterans were named by Harry Alter, president, among other appointments in this division. They are: Fillmore Weinstein (Army dischargee), merchandise manager; and Joseph Kaplan (Navy veteran), Joseph Holub, Leonard Sostrin, and Harold McClure (Army veterans), as city salesmen and countermen. Alex Port was appointed export manager; Harry Bernhart, city sales manager; and Joe Koncak, city salesman and counterman.

New general operating manager of the Chicago warehouse is Haley Long, and John McGovern has been appointed head of the receiving department. The parts and supply department is under the supervision of J. H. Carava.

A recently discharged Army veteran, Warren R. Kahn, will head the Eastern division, Mr. Alter added. Murray Addinoff and Armond Nelson are two other veterans that have been added to the sales staff of the New York branch under the supervision of Martin W. Kent, who continues as manager.

In the major appliance division, which distributes Crosley refrigerators and radios, Arthur S. Alter, former lientenant colonel in the Army, has been appointed vice president, and Max Geisler, sales promotion manager, the announcement said. H. C. Huebner is general sales manager of this division and W. L. Wood continues in charge of service.

OPA Motor, Generator Committee to Meet

WASHINGTON, D. C.—OPA announced the appointment of a 13-man integral horsepower electric motor and generator industry advisory committee to discuss ceiling prices for integral horsepower electric motors and generators during the present reconversion period.

Those selected to serve on the committee are: E. P. Allis, the Louis Allis Co., Milwaukee; H. A. Bamford, Fairbanks-Morse, Chicago; C. F. Bruder, Diehl Mfg. Co., Somerville, N. J.; E. E. Helm, Reliance Electric & Engineering Co., Cleveland; W. H. Henry, General Electric Co., Schenectady, N. Y.; A. H. Heywood, Westinghouse Electric Corp., East Pittsburgh.

H. A. Hudson, Wagner Electric Corp., St. Louis; W. R. Clements, Master Electric Co., Dayton, Ohio; R. W. Davis, Allis-Chalmers Mfg. Co., Norwood, Ohio; Elvin E. Hallander, Star Electric Motor Co., Bloomfield, N. J.; F. J. McEntee, U. S. Electrical Motors, Inc., Los Angeles; A. W. Peterson, Continental Electric Co., Inc., Newark, N. J.; and J. N. Tillbrook, Delco Products, Dayton, Ohio.

AMP Corp. Constructs $400,000 Factory Bldg.

ST. LOUIS — Construction is in progress here on a new $400,000 factory of the AMP Corp., manufacturers of refrigeration control valves, industrial cooling equipment, refrigerated carbonators, and drink dispensers. The new building will have a total of 90,000 sq. ft. of space, according to Marion L. J. Lambert, president.

Some 50,000 sq. ft. are to be added later, he said. Assisting Mr. Lambert are Arthur R. Peat, executive vice president; Parke H. Thompson, in charge of engineering; and John E. Wegescheide, secretary.

Prices on Igloo Model Set

CINCINNATI — Igloo Foods, Inc., here received maximum OPA prices for its 6-cu. ft. refrigerator equipped with a ½-hp. condensing unit. On sales to distributors the ceiling price is $160; to dealers, $192; and to consumers, $320.

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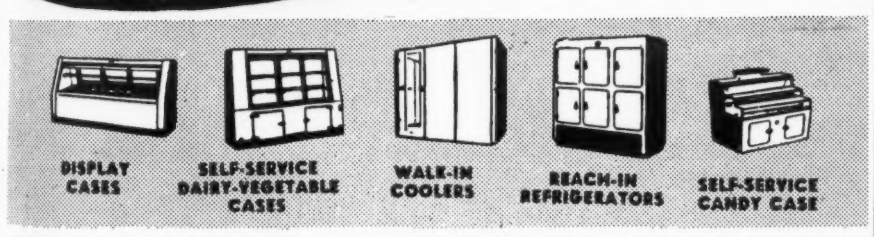
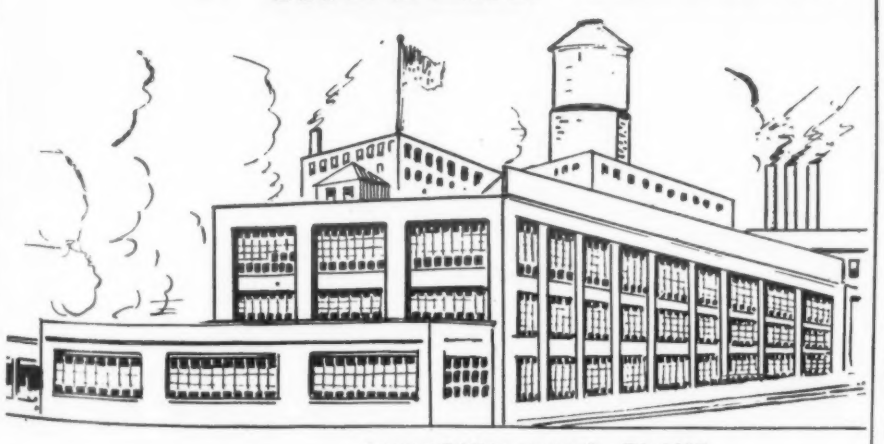


A MODERN PLANT FOR MANUFACTURE OF REFRIGERATION



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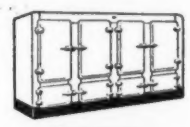

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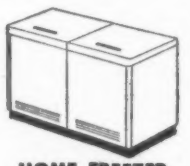

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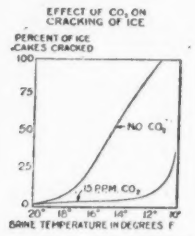
Branch Offices: New York City, Boston, Philadelphia, Washington, D. C. Chicago, St. Louis, Los Angeles, Dallas, Cincinnati, Luckey, Ohio.

PATENTS

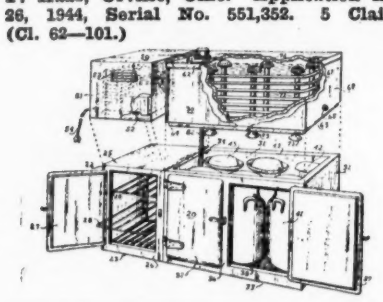
Week of Feb. 12

2,394,647. PROCESS OF MAKING ICE. Philip W. West, Baton Rouge, La., assignor to Board of Supervisors of Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La. Application Nov. 6, 1942, Serial No. 464,710. 4 Claims. (Cl. 62—172.)



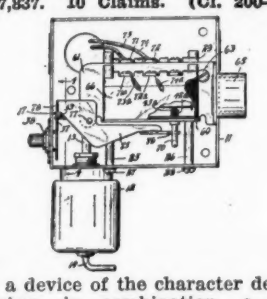
2. The process of manufacturing ice cakes substantially free of liability of shattering upon rise in temperature after freezing, and increasing the speed of freezing, which ocmprises imparting to the water to be frozen a free carbon dioxide content of at least 15 parts per million, and freezing the water at atmospheric pressure and at a temperature which would, in the absence of said carbon dioxide, produce cakes a substantial portion of which would shatter upon raising the temperature of the frozen cakes.

2,394,684. REFRIGERATOR. Norman F. Haas, Orville, Ohio. Application Aug. 26, 1944, Serial No. 551,352. 5 Claims. (Cl. 62—101.)



1. A refrigerator, comprising in combination, a storage compartment, a tank containing a liquid coolant mounted on the compartment, conduits on the tank opening at their upper ends in the said coolant and opening at their lower ends into the compartment, the said conduits having means thereon for dispersing the coolant in the said storage compartment, and a means in the compartment for gathering the coolant and returning the same to the tank.

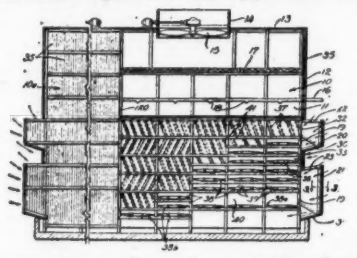
2,394,714. CONTROL DEVICE. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Dec. 4, 1942, Serial No. 467,837. 10 Claims. (Cl. 200—81.5.)



1. In a device of the character described, comprising, in combination, a floating lever, a first control device operated by one end of said floating lever, condition responsive means for actuating said floating lever at a point intermediate the opposite ends thereof, a manually movable member for limiting the movement of the other end of said floating lever so as to determine the condition value at which said first control device may be operated by said lever in response to said condition responsive means, and said manually movable member arranged for independently pivoting said floating lever, a control member operably engaged by said floating lever upon said indepedent pivotal movement, a second control device actuated by said control member upon such engagement, and said first control device actuated by said floating lever upon said independent pivotal movement of said floating lever, whereby the operation of said first and second control devices may be regulated.

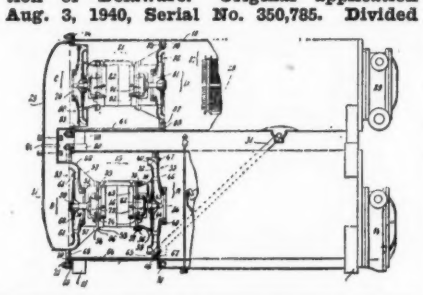
2,394,755. AIR DISTRIBUTION IN MECHANICAL DRAFT TOWERS. James G. De Flon, Los Angeles, Calif., assignor to The Fluor Corp., Ltd., Los Angeles, Calif., a corporation of California. Application Feb. 13, 1943, Serial No. 475,711. 4 Claims. (Cl. 261—109.)

1. In an induced draft cooling tower having continuous walls forming a vertically extending chamber, an air inlet in a lower side wall of the chamber, apertured filling decks within the chamber, and means for passing water downwardly over said decks; the improvements comprising a vertically extending apertured baffle spaced at its upper end from



the chamber wall at the outside of said inlet and causing air to flow downwardly and inwardly therethrough into the chamber, a fan at the top of the chamber operating to draw the entering air upwardly and inwardly from the inlet, said fan being offset from the transverse center of the chamber toward the inner side thereof opposite said inlet, so that the induction of air from the chamber is concentrated toward said inner side thereof from the transverse center of the chamber, and means closing the top portion of the chamber about said fan.

2,394,953. MECHANICAL REFRIGERATING SYSTEM. Robert W. Waterfill, Montclair, N. J., assignor to Buensod-Stacey, Inc., New York, N. Y., a corporation of Delaware. Original application Aug. 3, 1940, Serial No. 350,785. Divided and this application July 24, 1943, Serial No. 496,039. 7 Claims. (Cl. 62—115.)



1. A refrigerating system comprising a tubular casing, a bank of tubes housed in one portion of said casing with the ends

(Concluded on next page)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $2.50 per insertion. Limit 50 words.
RATES for all other classifications $5.00 per insertion. Limit 50 words.
Advertisements set in usual classified style. Box addresses count as five words, other addresses by actual word count.
PAYMENT in advance is required for advertising in this column.

POSITIONS WANTED

SALES ENGINEERING position wanted with company distributing Air Conditioning or Heating Equipment. Engineering graduate. Recently completed course in Air Conditioning, Heating, and Ventilation. Nine years successful sales experience. Age 36. Midwest location preferred. Available for employment in May or June. Box 1935, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER: 30 years old, being released from Navy in April. Particularly interested in connection with coil manufacturer. Number of ideas on coil design and unit cooler (low temperature installations) defrosting equipment which should prove valuable. Before war, in business for self — locker plant construction and service. Box 1943, Air Conditioning & Refrigeration News.

AVAILABLE MARCH: Twenty years experience in contracting, installing, and service engineering of air conditioning and refrigeration units. Available pending release from military installation about March 20. Location in warm climate desired. Box 1944, Air Conditioning & Refrigeration News.

MAN: 42 years old, 18 years in refrigeration and air conditioning industry. Competent engineer, held executive and promotional positions with major manufacturers and distributors, both foreign and domestic territories. Desires position managing commercial refrigeration and air conditioning operation. Minimum consideration to start, $6,000. Available March 31st. Box 1927, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER now available, ME graduate, M.I.T., age 38. Have 17 years background of design, development, and production of low temperature cases, air conditioning, and allied products. Qualified as chief or assistant chief engineer. Member ASRE, ASM, ASTM. Prefer to locate East or Midwest. Box 1946, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

ENGINEER for locker plant layouts, quotations, and general refrigeration contract work. Must have sales and executive experience and ability to work with dealers and service men. Ray Fischer, J. GEO. FISCHER & SONS, INC., 1019 East Genesee Ave., Saginaw, Mich.

UNLIMITED opportunity for refrigeration service and installation mechanic capable of taking charge of small shop at $1.25 per hour and half net profit of installations and service. Qualifications: Five (5) years continuous experience, perfect references, be able to make bond, start immediately. KELLY'S REFRIGERATION SALES & SERVICE, 2204 Twenty-Fifth Ave., Gulfport, Miss.

WANTED—Graduate engineer experienced in refrigeration and able to do some work on drawing board for responsible position with refrigerator company in Dallas area. Please give age, experience, and full particulars in letter. TYLER FIXTURE CORP., Waxahachie, Tex.

EQUIPMENT WANTED

125 Horse Power Electric Motor squirrel cage, 60 cycle, 3 phase, 2,300 Volts, 720 R.P.M. with oil compensator and starter. Will consider 900 R.P.M. ADVANCE REFRIGERATION CO., 3807 Florida Ave., Tampa 3, Fla.

EQUIPMENT FOR SALE

500 USED ice cream cabinets, Brine $5 per hole "as is." All sizes from 2 to 10 holes. Remanufactured A.C. Condensing units ¼ up to 1½. Write for particulars. EDISON COOLING CORP., 310 East 149th St., Bronx 51, N. Y.

ICE CREAM CABINETS, 4 to 14 Hole. Prompt delivery. WILSON INDUSTRIES, 837 Tilden St., Bronx, N. Y., City Phone Olinville 2-4880.

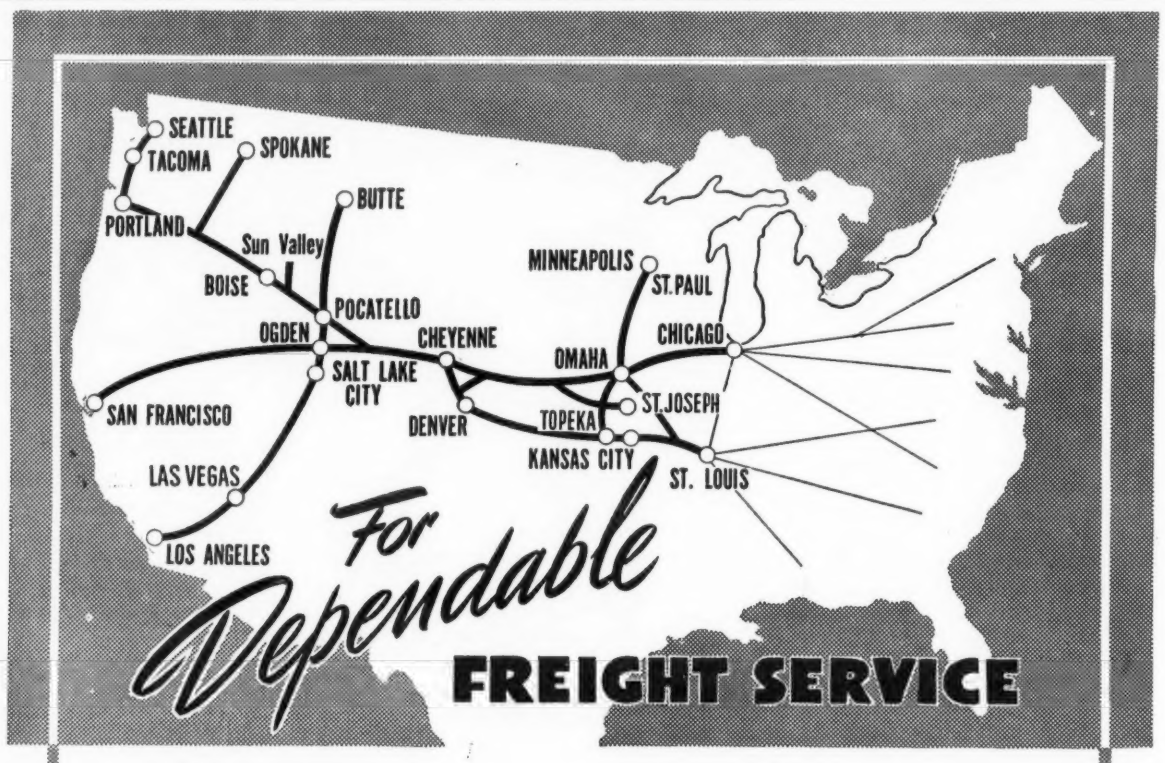
COLD SPOT PUMP PARTS, rebuild them like new. We can furnish you new blade valves, milled, finished to fit your Cold Spots. $1.50 set of 4. Send sample in letter of each pump. Scored cylinder housings honed and guaranteed, $4.50 each. Prompt service. BATE REFRIGERATION SERVICE, 1000 Langham Ave., Camden, N. J.

FRANCHISES WANTED

ARMY OFFICER—on terminal leave, formerly President large Refrigeration Company, Philadelphia, Pennsylvania, is re-establishing business there—Interested in obtaining distributorship good commercial refrigeration and air conditioning and appliance lines. Best references. Box 1945, Air Conditioning & Refrigeration News.

SCHOOLS

F. O. JORDAN SCHOOL OF ENGINEERING is licensed school conducted by successful engineers to teach you how to do design, layout, installation, and trouble-shooting required of the practical field or application engineer for the air conditioning, refrigeration, heating, and ventilating industries. 277 Moross, Grosse Pointe Farms 30, Detroit, Mich.



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A Strategic Middle Route that unites the East with the Mid-West, Intermountain and all Pacific Coast states.

Modern operating facilities, equipment and motive power include the famous "Big Boys," super-powered locomotives designed to meet industry's heaviest demands.

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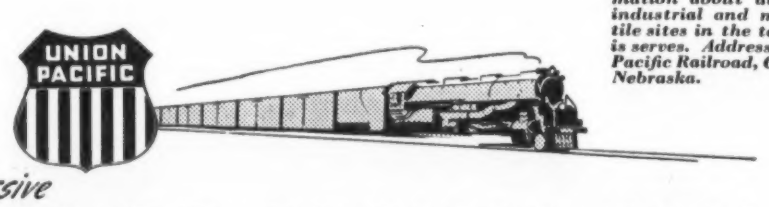
For dependable, on-the-job freight service—

Be Specific— say "Union Pacific"

★ *Union Pacific will, upon request, furnish information about available industrial and mercantile sites in the territory is serves. Address Union Pacific Railroad, Omaha, Nebraska.*



The Progressive
UNION PACIFIC RAILROAD
The Strategic Middle Route

AMANA *Commercial* REFRIGERATION
MODERN
• DISPLAY CASES
• COOLERS
• REFRIGERATORS
• HOME FREEZERS
AMANA SOCIETY
AMANA, IOWA

Canadian Refrigeration Journal
The only publication servicing the industry in Canada
National Business Publications Limited
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Jobber Inquiries Invited
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"RECOLD"
WATER DEFROST
"RECOLD" COILS — WATER-DEFROST
U.S. PAT. 2,219,393
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Here you have at your fingers' ends a Complete Library in ONE VOLUME, the necessary data you have been looking for on: MODERN UNITS, SYSTEMS AND MACHINES, REFRIGERANTS, Including Freon, Quick Freezing, Lockers, Water Coolers & Air Conditioning Systems
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MAIL AUDELS NEW REFRIGERATION GUIDE for free examination. If O.K. I will send you $1 in 7 days; then remit $1 monthly until price of $4 is paid. Otherwise I will return it.
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Occupation _____
Employed by _____ R—12

Patents (Con't)

(Concluded from preceding page)

of such tubes disposed adjacent one end of the casing, a water-box covering that end of said casing and providing supply and discharge connections to said bank for a liquid to be cooled, said portion of said casing and said bank being adapted to serve as the evaporator of said system; a compressor and its driving motor housed in said casing, said compressor being adapted to withdraw refrigerant vapor from the evaporator portion and to discharge it through the other end of said casing; a second tubular casing, a bank of tubes in said second casing with the ends of such tubes disposed adjacent an end of said second casing, a water-box closing that end of said second casing and providing connections for circulating a cooling medium through said last-mentioned tube bank, said second-mentioned casing and tube bank being adapted to serve as the condenser of the system; means for conveying compressed refrigerant vapor from the discharge of said compressor unit to said second casing; and means for returning condensed refrigerant from said condenser to the evaporator portion of said first-mentioned casing.

AVAILABLE FOR LICENSING OR SALE

Pat. 2,235,125. REFRIGERATION MEANS AND METHOD. Patented March 18, 1941. Group 35—84. Reg. No. 2,263.

Pat. 2,340,780. REFRIGERATION APPARATUS. Patented Feb. 1, 1944. Group 35—84. Reg. No. 2,264.

The two patents listed above maintain two temperature zones in one refrigerator, non-freezing compartment and deep-freezing compartment. Temperature and humidity of one compartment unaffected by other. Heavy insulation prevents temperature of compartments from affecting each other. Humidifying grids are provided below and above non-frosting coil maintaining proper humidity in compartment. (Owner) Mrs. Gertrude S. Torbensen, 1932 East 116th St., Cleveland 6, Ohio.

The international Harvester Co. has ready for distribution a pamphlet giving abstracts of its patents which are offered for license; the pamphlet also contains a statement with respect to its license policy. Copies of the patents have been filed with the Register of Patents, U. S. Patent Office, where they may be inspected by interested parties.

Among these are included 10 patents pertaining to refrigeration. Requests for copies of the abstract pamphlet should be made direct to Patent Department, Internatoinal Harvester Co., 180 North Michigan Ave., Chicago 1, Ill.

CARRENE METERS

- Include sealed dehydrator can
- Flow-tested for long, efficient service
- Purge-core prevents air trap, moisture
- Bright-dipped for clean interior

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SPECIFY...
DRYERS THAT BEAR THIS LABEL
CHARGED DAVISON'S IN SILICA GEL OUT WITH
—the label that is your guarantee of maximum performance and satisfaction. Your jobber stocks it—for refilling and in factory charged dryers.

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Every Motor Repair Shop
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ELECTRICAL AND AUTOMOTIVE PRODUCTS

Home Freezer Prices

Carbonic Gas

WESTPORT, Conn.—Eight models of food freezers manufactured by the Carbonic Gas Equipment Co. here were priced at the following ceiling levels by OPA in Order 305, MPR 591:

Model	On sales to— Distributors	Dealers	Consumers
U-20, 20 cu. ft. ¼ hp. condensing unit	$315	$378	$630
U-20, 20 cu. ft. ¼ hp. condensing unit less compressor	233	280	466
U-20-SF, 20 cu. ft. ¼ hp. condensing unit with removal front	345	414	690
U-20-SF, 20 cu. ft. ¼ hp. condensing unit, less compressor	263	316	526
U-20, 30 cu. ft. ⅓ hp. condensing unit	425	510	850
U-30, 30 cu. ft. ⅓ hp. condensing unit less compressor	333	400	666
U-30-SF, 30 cu. ft. ⅓ hp. condensing unit with removal front	450	540	900
U-30-SF, 30 cu. ft. ⅓ hp. condensing unit less compressor	363	436	726

Norge

DETROIT—Two models of Norge home freezers manufactured by Norge Division, Borg-Warner Corp. here were priced at the following ceiling levels by OPA:

Model	On sales to— Distributors	Dealers	Consumers
HF-18 18 cu. ft. ⅓ hp. condensing unit	$285	$342	$570
HF-26 26 cu. ft. ½ hp. condensing unit	350	420	700

Artkraft Mfg.

LIMA, Ohio—Retail ceiling price of $269.50 (Zone 1) has been established by OPA for the 6-cu. ft. home freezer produced by Artkraft Mfg. Corp. here. The freezer is powered by a ⅛-hp. condensing unit.

Zone 1 Prices

Consumer	Dealer	City Distributor Dealer	City Distributor
$269.50	$161.75	$165.75	$135

Zone 2 Prices

Consumer	Dealer	Distributor
$279.50	$172	$139

Ceiling prices have also been established for a porcelain leaf for home freezers manufactured here by the firm. On sales to distributors, dealers, and consumers maximum prices for this item are $6.80, $7.50, and $10, respectively.

Chapman & Wood

PORTLAND, Ore. — Maximum net prices, f.o.b. point of shipment, have been established on sales of 12, 15, 18, and 21 cu. ft. frozen food cabinets manufactured here by Chapman & Wood in OPA Order 286, MPR 591.

The prices, which are subject to the usual discounts and allowances are:

	On sales to— Dealers	Consumers
12 cu. ft. ¼ hp. condensing unit	$244	$375
15 cu. ft. ¼ hp. condensing unit	277	425
18 cu. ft. ⅓ hp. condensing unit	292	450
21 cu. ft. ⅓ hp. condensing unit	309	475

Freezit Co.

ST. LOUIS — The Freezit Co., manufacturer of frozen food cabinets here, has been granted the following maximum prices on two of its models by OPA:

Model	On sales to— Distributors	Dealers	Consumers
2C-16, 16.4 cu. ft. ⅓ hp. condensing unit	$260.00	$312.00	$520.00
2C-20, 20 cu. ft. ½ hp. condensing unit	297.50	357.00	595.00

Borgerud Co.

DEERFIELD, Wis.—Borgerud Refrigerator Co. here received the following ceiling prices for sales of its 17-cu. ft. home freezer powered by a ¼-hp. condensing unit.

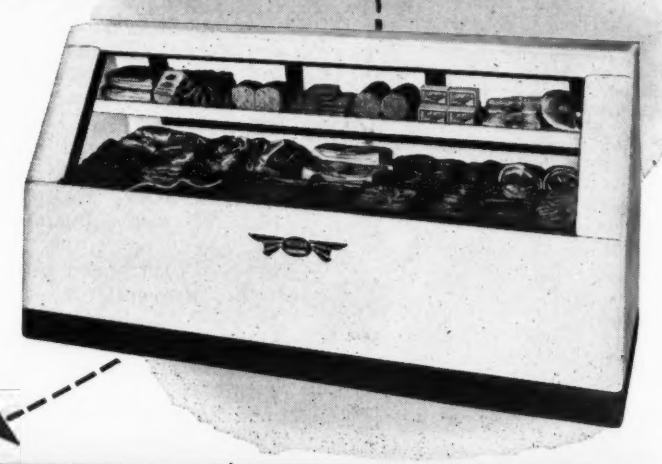
On sales to distributors, $255; to dealers, $298; and to ultimate consumers, $425.

Schenzel Rfn.

FREMONT, Neb.—Retail ceiling price of the 14¾-cu. ft. Schenzel Refrigeration Service frozen food cabinet powered by a ¼-hp. condensing unit was set at $350 by OPA. On sales to distributors the maximum price is $210 and on sales to dealers, $245.

Clinton Co.

MINNEAPOLIS — Wholesale and retail prices have been announced by OPA for the 15-cu. ft. home freezer manufactured by the E. G. Clinton Co. here. Equipped with a ¼-hp. condensing unit, the freezer is priced at $285 on sales to dealers and $385 on sales to consumers.

MODERN
One member of a complete quality line . . . designed to be salable in volume at a profit.
Refrigerated Meat Display
Recognized as quality products, SHERER Refrigerated Meat Display Cases will continue to be built to those same high standards that have earned them their present outstanding position in the industry.

SHERER
COMMERCIAL REFRIGERATORS
SHERER-GILLETT CO., Marshall, Michigan
VEGETAIRES • DAIRY CASES • REACH-IN
REFRIGERATORS • WALK-IN COOLING ROOMS •
MEAT & DELICATESSEN DISPLAY CASES •

DOES *Frosting* STOP SALES IN YOUR UNITS?

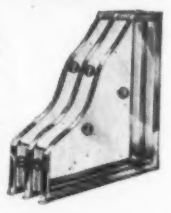
INSTALL
Thermopane REG. U.S. PAT. OFF.
L·O·F's MULTIPLE-GLASS INSULATING UNIT

Sweating or fogging of the glass in refrigerated food cases may easily slow down sales to the point of customer complaints. You can guard against such conditions by the simple method of installing *Thermopane*, multiple-glass insulating unit developed by Libbey·Owens·Ford. It is ideally suited to the peculiar problems of frozen food cases.

Thermopane is factory-fabricated to your exact specifications. It comes as a unit, with all inside surfaces of the glass factory-cleaned, reducing both labor and installation time. This means that *only two surfaces* have to be cleaned. And it's installed easily —just like ordinary glass.

Why not give your cases fog-free vision and increase their "sales ability" by equipping them with *Thermopane*. Your customers will appreciate the difference. For more information, write Libbey·Owens·Ford Glass Company, 1236 Nicholas Building, Toledo 3, Ohio.

GET THESE 5 ADVANTAGES OF THERMOPANE



1. INSULATING AIR SPACE. The layer of air inside the *Thermopane* unit is scientifically cleaned, dried and hermetically-sealed at the factory. This sealed air space gives *Thermopane* its high insulating efficiency.
2. L·O·F'S BONDERMETIC SEAL. This metal-to-glass seal bonds the panes of glass into one unit to guard against dirt and moisture entering the air space.
3. CLEARER VISION. The sealed-in dry air greatly reduces the possibility of condensation.
4. ONLY TWO SURFACES TO CLEAN. The glass surfaces inside a unit are specially cleaned at the factory. No extra cleaning is required.
5. FABRICATED TO SIZE. Each *Thermopane* unit is manufactured to your exact specifications—requires no cutting or trimming, and is easily installed like a single pane of glass.

WHEREVER VISION IS IMPORTANT USE L·O·F *Polished Plate* GLASS
L·O·F LIBBEY·OWENS·FORD
a Great Name in GLASS

OPA Fixes Ceilings On 30 Tyler Beverage, Walk-In, Display Coolers

NILES, Mich.—Ceiling prices on six beverage coolers, 12 walk-in coolers, and 12 display coolers have been assigned by OPA to Tyler Fixture Corp. here. The prices cover sales to distributors, dealers, and consumers, as shown below:

Model	On sales to— Distributors	Dealers	Consumers
TB6—17 case capacity beverage cooler	$144	$ 168	$ 240
TB6T—Same as above with bar top and porcelain front	174	203	290
TB10—30 case capacity beverage cooler	216	252	360
TB10T—Same as above with bar top and porcelain front	260	303	432
TB3—3' compressor counter	30	35	50
TB3T—Same as above with bar top and porcelain front	54	63	90
WI-66—Walk-in storage coolers	378	441	630
WI-86—Walk-in storage coolers	435	508	725
WI-88—Walk-in storage coolers	471	550	785
WI-96—Walk-in storage coolers	471	550	785
WI-910—Walk-in storage coolers	534	623	890
WI-106—Walk-in storage coolers	516	602	860
WI-108—Walk-in storage coolers	540	630	900
WI-1010—Walk-in storage coolers	621	725	1,035
WI-126—Walk-in storage coolers	588	686	980
WI-128—Walk-in storage coolers	603	704	1,005
WI-1210—Walk-in storage coolers	684	798	1,140
WI-1212—Walk-in storage coolers	780	910	1,300
WI-66D—Display front coolers	435	508	725
WI-86D—Display front coolers	519	606	865
WI-88D—Display front coolers	567	662	945
WI-96D—Display front coolers	537	627	895
WI-98D—Display front coolers	600	700	1,000
WI-106D—Display front coolers	621	725	1,035
WI-108D—Display front coolers	666	777	1,110
WI-1010D—Display front coolers	735	858	1,225
WI-126D—Display front coolers	687	802	1,145
WI-128D—Display front coolers	756	882	1,260
WI-1210D—Display front coolers	846	987	1,410
WI-1212D—Display front coolers	930	1,085	1,550

4 Michigan R.S.E.S. Chapters Arrange March 25 Meeting

ST. JOHNS, Mich.—Sponsored by the Wolverine Chapter of the Refrigeration Service Engineers Society in Lansing, Mich., a joint meeting of the Furniture City, Motor City, Saginaw-Bay City, and Wolverine chapters of the society will be held March 25 at the Steel hotel here, announces John Bush, secretary of the Lansing group.

The meeting is open to the refrigeration industry, and is scheduled to begin at 2 p.m. and continue into the evening with a steak dinner and entertainment. The party will be stag.

R.S.E.S.--

(Concluded from Page 1, Column 5)

10—Opening remarks by President W. H. Sneath.

10:15—Introduction of international officers. Response by H. T. McDermott, national secretary.

11—Secretary's and treasurer's reports.

11:30—Educational film.

12—Appointment of nomination committee.

12 to 2—Luncheon Period.

2—"Heat Transfer Units above 32°" by J. G. McMillen.

2:30—"Heat Transfer Units below 32°" by Al Sawyer.

3—"Air Conditioning, Operation, and Service" by S. A. Durbin.

3:45—"Information Please," H. S. Parish.

8—Educational and entertainment films.

MONDAY, MARCH 18

10—"Going into Business" by Paul Reed.

10:45—"Insurance Problems and Accident Prevention."

11:15—Education film.

11:30—Election of officers.

12-2—Luncheon Period.

2—"Evaporative Condensers" by Cimco York speaker.

2:45—"Advantages of Heat Interchangers," by Paul Domke.

3:15—Talk on service by G. E. Craff.

3:45—"Information Please," H. S. Parish.

7—Supper and dance under the auspices of the Ontario Maple Leaf chapter.

Wisconsin R.S.E.S. to Hold Week-end Convention

MADISON, Wis. — Featuring a talk entitled "Trend of Times" by Al Murray of Mills Novelty Co., a Question Box session conducted by R. L. Hendrickson, a talk by Herman Goldberg, and the installation of officers conducted by C. Buschkopf, the Wisconsin state association of the R.S.E.S. will hold its convention here on March 16 and 17, announced Mr. Buschkopf, acting president of the organization. Program follows:

SATURDAY, MARCH 16

9—Registration.

2—Opening of convention. Welcome to Madison by Mayor Kraege.

2:30—Minutes of previous meeting.

3—Al Murray of Mills Novelty Co., "Trend of Times."

3:30—Herman Goldberg.

4—Question box conducted by R. L. Hendrickson.

8—Dancing in Park Hotel Blue Room.

SUNDAY, MARCH 17

10:30—Meeting called to order. Report of Committees.

12—Installation of officers by C. Buschkopf.

12:15—Open discussion.

1:30—Banquet and entertainment.

Homefreezer Ceiling Listed

BROOKLYN—For sales of its 21-cu. ft. frozen food cabinet equipped with a ½-hp. condensing unit, Mercury Refrigeration here has the following OPA price ceilings: On sales to distributors, $400; to dealers, $480; and to consumers, $800.

Norge-Heat--

(Concluded from Page 1, Column 4)

in great savings to the consumer," he added. These are now undergoing laboratory and field tests.

Previously, the products were manufactured by the Norge division and marketed through Norge's heating and conditioning department. "However," Mr. Davis explained, "we realized that if we were to meet the potential demand for this type of equipment in new and existing housing, a separate operation was necessary.

"For this reason, we are providing enlarged and specialized production facilities and setting up a new factory marketing organization." Production, he continued, would be started at the earliest possible moment in order to make merchandise available in quantity for next fall's heating market and "to assist, as much as possible, in the nation's overall housing program."

Borg-Warner Corp. Plans New Stock Issue

CHICAGO—A special meeting of Borg-Warner Corp. stockholders has been called for April 1 to authorize an issue of 250,000 shares of preferred stock, according to C. S. Davis, president.

The stock, which will carry an annual dividend rate not to exceed $3.75, is intended to raise about $20 million additional capital for the company's program of expansion and improvement, said Mr. Davis.

12 Ohio Contractors Organize Association

COLUMBUS, Ohio—Twelve central Ohio refrigeration contractors organized the Central Ohio Association of Refrigeration Contractors at a meeting held in the Southern hotel here recently.

Affiliated with the National Association of Refrigeration Contractors, the new group is headed by F. J. Zoppel, president of Columbus Refrigeration Co. here.

W. C. Evans of Evans & Mohr is vice president, and William Boye of United Refrigeration Co. is secretary-treasurer.

E. S. Wright of Youngstown, Ohio, secretary-treasurer of the national association, assisted in the formation of the Ohio group.

Heavy Demand Prompts Buffalo Tool & Die to Buy New Plant

BUFFALO — Heavy demand from the refrigeration industry has prompted the Buffalo Tool & Die Mfg. Co. to purchase the single-story building No. 5 in the Pierce Arrow property here for expansion. Buffalo Tool & Die will move to its new plant April 1.

Containing 20,000 sq. ft., the newly acquired structure is assessed at $30,000. Peter J. Hosta, owner of the firm, said the company will double present employment and substantially boost production. He said the order backlog is sufficient to keep the new plant at capacity for at least six months.

63,000 sq. ft. Bldg. Purchased by Perfex

MILWAUKEE—The Perfex Corp., manufacturer of automatic temperature controls and industrial engine radiators, has purchased the manufacturing plant at 710 South Third St., which it operated during the war as its Optical Division. The building, which contains 63,000 sq. ft. of floor space, will be used to increase production.

for SULFUR DIOXIDE and METHYL CHLORIDE

See Your ANSUL JOBBER

These Ansul Refrigerants have a long record for DRYNESS, PURITY and DEPENDABILITY. You will like Ansul's friendly service.

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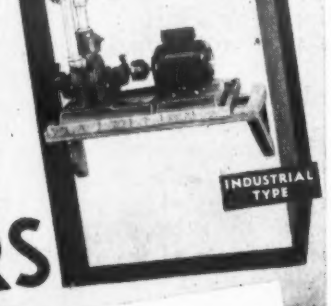

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